

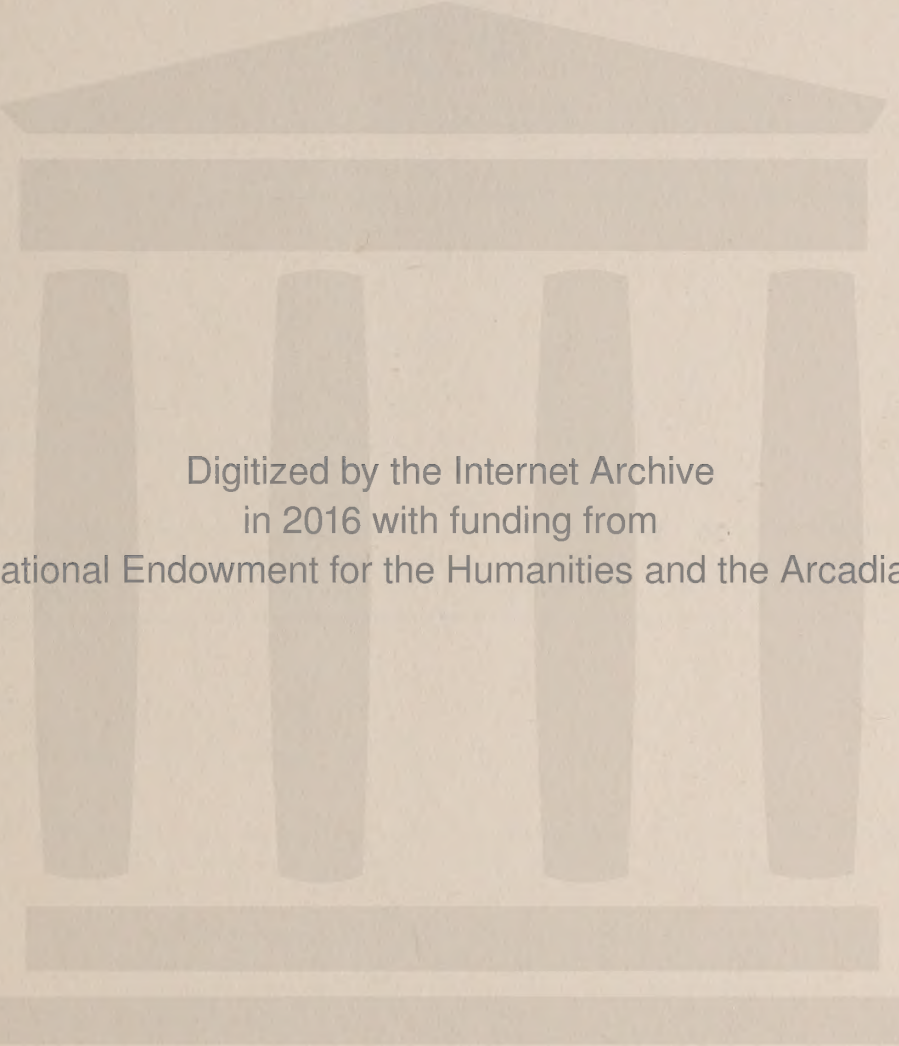
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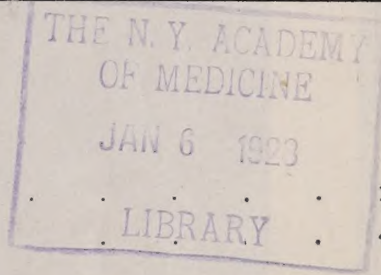
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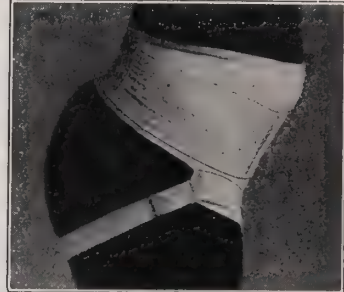
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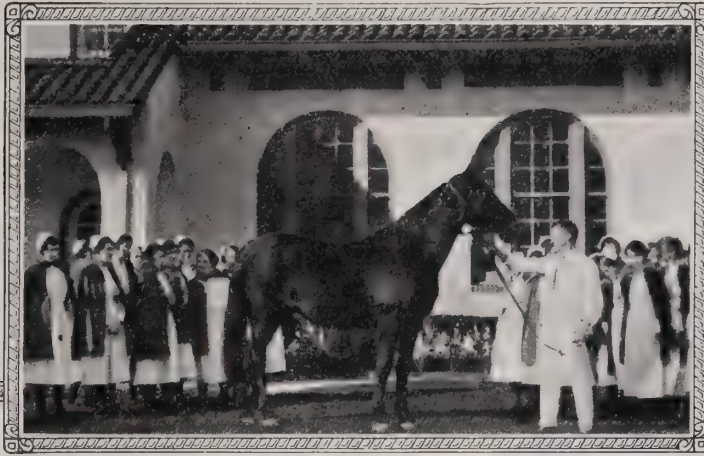
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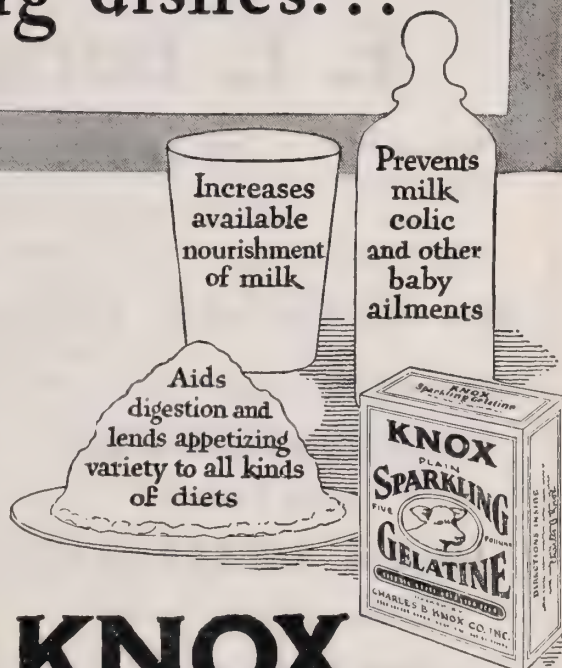
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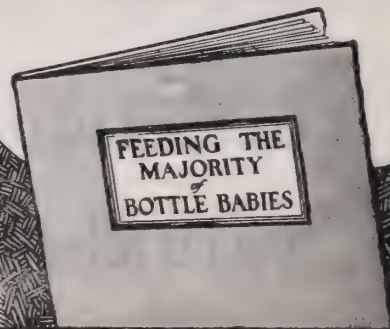
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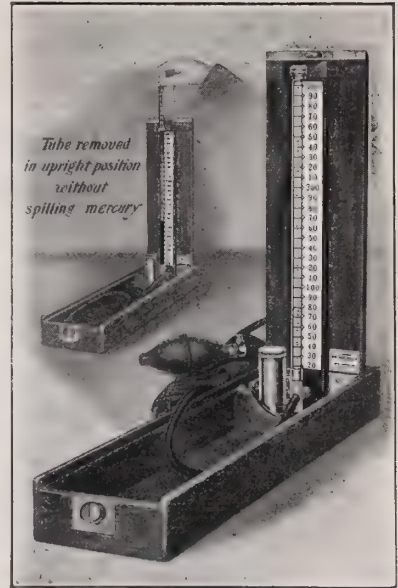
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THE RHODE ISLAND MEDICAL JOURNAL

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ORIGINAL ARTICLES

OBSERVATIONS ON BLOOD PRESSURE*

BY WILLIAM E. PREBLE, M.D., Sc.D.

BOSTON, MASS.

The first actual measurement of blood pressure recorded in medical history was made by Stephen Hales, an English clergyman, in 1733¹. He introduced a long glass tube into an artery of a horse and noted the height to which the column of blood was forced. In 1828 Poiseuille² substituted the mercury manometer for the inconvenient long glass tube, and in 1847, Ludwig³ perfected an instrument making possible the graphic record of blood pressure and introducing our modern method of measuring and recording it. All of the older instruments for measuring blood pressure used the glass tube and column of mercury, and were rather inconvenient to carry, hence blood pressure did not become "popular" until the invention of the modern instrument, measuring blood pressure in terms of the mercury column, but compact enough to be easily carried in the physician's handbag.

Systolic blood pressure may be defined as the pressure exerted on the walls of the larger arteries practically coincident with the beat of the heart, measured in terms of the height in millimeters to which a column of mercury may be forced by said pressure. Diastolic pressure is the pressure exerted while the heart is at rest, measured in the same terms. Hypertension and hypotension are the terms usually employed for blood pressure respectively above and below normal. While there is still some controversy as to just what are the figures for normal pressure, observations by several investigators^{4, 5, 6} indicate that 140 is the upper limit, and 110 the lower limit of normal systolic pressure in adults. Alvarez⁷ after an exhaustive study of the subject, fixes 130 for men and 127 for women as the maximum normal systolic pressure. Normal diastolic pressure is about two-thirds of the sys-

tolic pressure. Many attempts have been made to formulate some rule by which normal systolic pressure may be estimated according to the age of the patient. One hundred plus the age, one hundred plus the age minus ten, and one hundred twenty plus half the age, have all been suggested but none has proved satisfactory. The reason is that, contrary to our former ideas, the systolic pressure does not rise steadily with advancing years. There is considerable evidence tending to prove that the normal person establishes his level of blood pressure in his twenties, and maintains it at about the same level to between 40 and 50, when it slowly rises with increasing years.

Until recently comparatively little attention has been paid to hypotension, although this condition is quite as common as hypertension. Several observers^{8, 9, 10} have called attention to its occurrence in many of the acute infectious diseases, such as pneumonia, influenza, acute dysentery, diphtheria, etc., as well as in chronic wasting diseases such as pulmonary tuberculosis, cancer, and the anemias. In general, it is apt to occur in diseases that throw an unusual load on the respiratory system, or interfere with normal oxygenation. Marked hypotension also occurs with hemorrhage, surgical shock, and after prolonged inhalation anaesthesia. Following spinal anaesthesia there may be a sharp drop of 50 per cent, or more, of the systolic pressure, a point for the surgeons to remember. Onset of shock is shown by a fall in blood pressure earlier than by any other symptom¹¹. There are certain individuals who persistently run a sub-normal blood pressure without obvious cause. The term essential hypotension is applied to this condition. The etiology is not known. By some authors abnormality of heart, arteries, arterioles, or capillaries is assumed. Others consider the condition due to some unknown toxin or toxins that either depress the vasomotor centre or act directly on the arterioles or capillaries. Still others, of course, blame the endocrines. However, as it has been demonstrated by exhaustive research carried out by several of our large life insurance companies (Metropolitan, Northwestern, Jefferson Standard)

*Read at the Annual Meeting of the Rhode Island Medical Society, June 2, 1927.

that hypotension is a health asset, and not a liability, and that persons with this condition outlive their normal life expectancy, let us not worry unduly about the matter. In my opinion, essential hypotension requires no treatment, and causes no subjective symptoms—at least, not until the patient's attention is called to it.

Hypertension has engaged the attention of the medical world for many years, and volumes have been written on the subject. While its etiology in most cases is unknown, our general knowledge of the condition has increased materially in the past few years. It is well known that the state of mind has a marked influence on blood pressure. Anger, fear, worry and, in general, anything that causes undue nervous activity raises the blood pressure¹². This may be a temporary or permanent condition. An hypertrophied heart, arterio-sclerosis, and chronic nephritis may cause an elevation of blood pressure, though a decompensated heart or certain types of chronic nephritis may be accompanied by a hypotension. Overweight is usually accompanied by increased arterial tension, which drops promptly with decrease in weight. Even in obese patients with organic cardio-vascular or renal disease reduction of weight will almost invariably materially reduce the blood pressure. ⁶Inhalation anaesthesia causes a rather abrupt rise of 10 to 30 m.m. followed by a gradual drop to the original figure, or below, if the anaesthesia is prolonged. While this initial rise rarely results disastrously for patients with hypertension, it is something for the surgeon to bear in mind.

The great problem in regard to hypertension is the etiology in those cases apparently without organic disease as a causative factor. To this condition the term essential hypertension is applied. Speculations as to its etiology are almost innumerable. A few years ago it was assumed that all of these patients had some sort of renal impairment, and that the increased blood pressure was due to the increased resistance in forcing the blood through the damaged kidneys. Experimental and clinical evidence have proved that this theory is not tenable. In more recent years many theories have been advanced. Leclercq¹³ has advanced the interesting hypothesis that hypertension as a disease entity is preceded by attacks of "regional hypertension" in which the brain, lungs, aorta, liver, or kidneys may be involved. These attacks may be

relieved by vaso-dilator drugs, but essential hypertension eventually ensues. Others blame the endocrines, and over or under secretion of the adrenals, pituitary, and kidney cortex, pancreas, liver or spleen, is assumed to raise or lower the blood pressure^{14, 15}. This theory is not supported by convincing experimental or clinical evidence. Much work has been done on the supposition that either normal or abnormal products of metabolism may invade the blood stream and cause hypotension or hypertension through their action on the vaso-motor center, or directly on the arteries, arterioles, or capillaries. It is well known that certain metabolites, such as histamin and cholin, are depressor substances, while guanidin and tyramin are pressor substances¹⁶, but up to the present time no one has been able to demonstrate that any of these substances are normally or abnormally present in the blood stream in sufficient quantities to materially affect the blood pressure. Hence, the theory that blood pressure is regulated by the preponderance of pressor or depressor metabolites in the blood stream is not substantiated by experimental evidence. About as far as we can go at present is to assume that essential hypertension is due to some unknown toxin, or toxins, circulating in the blood stream, and causing a contraction of the arterioles, either by affecting the vaso-motor center, or by acting directly on the vessel walls.

The pathological findings in patients with hypertension are interesting. Fishberg¹⁷ reports a series of 72 cases of essential hypertension autopsied by himself. In all of these cases the terminal arterioles of the kidneys showed pathological changes; of the spleen, two-thirds of the cases; of the pancreas, one-half; of the liver, one-third; and brain, one-fifth; other organs, rarely. The changes are similar to those found at autopsy in patients of advanced years. It would seem apparent that the above pathological changes are due to high blood pressure, rather than being a cause of it.

According to Major¹⁸ there are at least 5,000,000 people in this country with high blood pressure, and probably 100,000 deaths occur annually from this cause. May¹⁹, reporting figures of the Prudential Life Insurance Company from 1920 to 1924 inclusive, gives the following statistics, comparing actual deaths to normal life expectancy:

Systolic blood pressure not recorded	97.1% of normal
" " " under 140	102.8% " "
" " " 141-170	133.6% " "
" " " over 170	219.6% " "
" " " 200 and over	827.3% " "

The findings of the Metropolitan Life Insurance Company on approximately 26,000 cases rejected because of high blood pressure corresponds with the above figures. Hypertension is a very real problem for the medical profession.

What are its symptoms? To the best of my knowledge, there are none. Many authors ascribe to hypertension various subjective symptoms, most of which are, curiously enough, also ascribed to hypotension. To my mind, these symptoms are due to the accompanying organic impairment and not to high or low blood pressure.

The treatment of patients with hypertension is considerable of a problem. There are several drugs that will temporarily drop the blood pressure. The nitrites, erythol tetranitrate, atropine, and potassium iodide are well-known vaso-dilators. Bleeding is the most effective temporary measure. Certain tissue extracts when injected subcutaneously or intravenously raise the blood pressure, while others lower it. Oliver and Schafer²⁰ in 1895 demonstrated that extracts from the adrenals would cause an immediate rise in blood pressure, and that the pituitary also had a pressor principle; and in 1896 Schafer and Moore²¹ found that brain extracts produce a fall in blood pressure. Vincent and Sheen¹⁵ in 1903 found that injection of extracts of most organs, including the liver, causes a fall in pressure. Various authors have from time to time described the depressor action of this or that tissue. Recent examples are MacDonald's¹⁶ work on liver extract, and the work of James, Laughton and Macallum²² on the same subject. It is claimed that repeated injections of liver extract lower the blood pressure and in some cases it remains at a lower level for some days. Other authorities have been unable to confirm this. Observations on large series of hypertension cases are necessary in order to establish the clinical value of liver extracts.

Diet is not a factor in hypertension except in patients that are over-weight. In these cases, reducing the weight is almost invariably accompanied by a considerable drop in pressure, whether or not organic lesions are present, as stated

above. It was formerly thought that the proteid intake affected the blood pressure, but it has been shown by well controlled experimental work that the amount of proteid ingested does not influence the pressure. Frothingham and Smillie²³ studied the effects of high and low proteid diets in both nephritics and cases of essential hypertension, and Strouse and Kelman²⁴ did similar work with essential hypertension cases, and their work seems to prove that in neither class of patients is the blood pressure affected by the proteid intake. It should be remembered that a diet with the proteid reduced below body needs may do more harm to the patient than does the disease. Salt was formerly thought to raise the pressure, and its withdrawal from the diet to lower it, but O'Hare and Walker¹² studied this matter and proved, apparently, that the pressure is not affected by the amount of salt ingested. The above work is important, as we do not now feel obliged to make restrictions in the patient's diet that are very unpleasant for the patient. Few people can be thoroughly happy on a diet of boiled rice, milk and spinach. Most of us like a little roast beef occasionally.

In the absence of definite knowledge as to the etiology of hypertension, treatment must be in the main palliative rather than curative. As it is well known that too hard work, either mental or physical, tends to raise the pressure, the patient should be advised regarding reduction, if necessary, in working hours. The value of rest periods after meals and regular and frequent vacations should be explained to the patient. The cardiovascular system should be protected from any unnecessary strain, and the heart supported in emergencies. A moderate amount of light exercise should be prescribed. Very hot or very cold baths should be prohibited for obvious reasons. Worry should be eliminated as far as possible, especially worry by the patient over his own condition. In the very nervous types, bromides or some of the other mild sedatives, are very helpful. The vaso-dilator drugs may be useful in emergencies, but their prolonged use is of very doubtful benefit to the patient. About all we can say about the diet is that it should be well balanced and easily digested, and very large meals should be prohibited. Moderation by the patient in all things, and a reassuring attitude by the physician are two *sine qua nons* in the treatment of these patients.

SUMMARY

1. The etiology of essential hypertension and hypotension is at present unknown.
2. Hypotension occurs in many acute infectious diseases, in several of the chronic wasting diseases, and in other conditions without obvious cause. It is a health asset, not a liability.
3. Hypertension is always a danger signal.
4. Both essential hypertension and essential hypotension are *per se* without symptoms.
5. The treatment of essential hypertension is palliative, not curative.

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DENTISTRY AS THE MEDICAL PROFESSION SEES IT*

BY ERNEST S. CALDER, D.M.D.

PROVIDENCE, R. I.

The mouth has always been a means of diagnosis used by the medical profession (1) because of its rich blood supply and quickness to respond to a body disturbance, (2) because in the mouth and adjacent throat, containing the tonsils, bacteria are always present in the saliva waiting a favorable moment for attack.

It has been said that the dentist is known by his patients' mouths, and it does not take the medical profession long to recognize the difference between a messy mouth with broken off roots and diseased gums from one that is well cared for.

It is only comparatively recent that the teeth, gums and the dentist have had their share in this diagnosis.

The medical profession is supposed to be little interested in how the teeth are filled and what materials are used in filling the teeth, but mainly with infectious granulomas or cysts which may or may not be at the ends of the roots of the teeth, which, if present, will show in the X-ray.

Secondly, dentistry is seen through the eyes of the X-ray. There can not be any argument as to the fact of absorption of bacteria from these focal infections at the apices of devitalized or dead teeth.

You all are familiar with the symptoms of absorption, whether from the teeth, tonsils, digestive tract, gall bladder, etc.:

*Read before the Rhode Island Medical Society, June 2, 1927.

The teeth are the first to be suspected if the symptoms of absorption are present.

The eyes are the first to be affected from diseased teeth. I have no doubt many a person lost his or her eye-sight through this absorption years ago before the X-ray came into general use.

The frontal headache is another symptom.

The knees, I think, are usually more susceptible, the rheumatic condition first occurring there. There are so many things that a focal infection can cause, I will not attempt to go into details, but mention the heart, blood pressure, kidneys, gall bladder, rheumatism and nervous disorders in all parts of the head. I have seen all these conditions change by extraction of teeth and the curreting of diseased tissue.

Unfortunately, some of the medical profession do not have X-rays taken to help this diagnoses, but if they see a gold crown or a porcelain (pivot) crown, they say, "Have them extracted," and the patient goes to the dentist with the message. The dentist thinks the doctor is criticizing his work and methods; he feels indignant, tells his patient that the teeth are O. K.; that there is too much blame put on teeth. The patient is the one that suffers by this lack of co-operation.

If the medical doctor is convinced that there is a focal infection, X-rays must be taken to check the teeth. If they are positive, they must be removed, or the infectious tissue rendered harmless. Right here, then arises the question, "Are dead (devitalized) teeth treatable? Will this hollow spot at the end of the root fill in with new bone?"

1. If symptoms of absorption are present, and the patient's resistance to bacteria is unusually low;

2. If the diseased condition as shown by the X-ray is of large area;

3. If the apex of the root has been eroded by the necrosis taking place—there can be no help for the tooth, and it should be removed.

1. If the symptoms of absorption are present in a mild form, and the patient's resistance good;

2. If the diseased condition covers small area;

3. If the root apex is smooth and not necrotic—there is no reason why the tooth can not be saved, providing the root or roots are straight and the canal can be explored to the end.

The blunders of dentistry are seen by the medical profession. Novocaine has been severely crit-

icized by the Society of Anæsthetists as being dangerous. Of course, this may be only a business move on their part, but, nevertheless, it has been given a black mark by the general medical doctor. There have been many cases of partial paralysis, swollen glands, swollen masseter muscles, osteomyelitis, paralyzed spinal cords, blood poison and even death from blood poisoning.

4. It is possible to give a mandibulae nerve block and have none of these unpleasant happenings, but a great many dentists depend entirely on novocaine where the general anaesthetics (nitrous oxide and oxygen) are indicated. It is these cases which prejudice the medical profession.

Everybody is liable to be misunderstood and their words given a wrong meaning. Just a few days ago a mother told me that her doctor told her that it was not necessary to have the child's first teeth filled. She heard him say something about first teeth coming out, so put her own conclusion to it.

The medical profession's advice is usually followed, and there are many mothers who still think that the first teeth of the child should not be cared for, as eventually they will be replaced. This is absolutely wrong, as decayed teeth prevent proper chewing of food and lead to tooth-aches and later to abscessed conditions, from which absorption can take place as in adults. I have always preached the care of the first teeth for a number of reasons:

1. If the dentist can meet and work for the child at three and one-half to five years of age, there is little pain given in filling the teeth, the confidence of the child is gained, and the great bugbear, fear of dental pain, is conquered.

2. The correct contact of the temporary teeth is necessary for a proper expansion to take place to accommodate the permanent teeth.

3. It is possible to practice preventive dentistry by depositing silver in the fissures of teeth even if no decay is present.

4. The mother can be told the importance of the 6-year molar and its tendency towards decay because of its formation, and again preventive dentistry practiced.

Dentistry may have its faults and shortcomings, but we are not standing still by any means. Of course, we are not endowed properly for research work on a large scale, but three things we are working for:

1. Preventive dentistry.
2. The correct foods in the diet: Vitamin C—lime producing.
3. Oral cleanliness—correct occlusions, absence of pyorrhea.

It has been recorded that the people of the north, Eskimos, have wonderful sets of teeth without decay, but after living on the diet we use, these teeth start to decay. It may be possible that our houses are too warm as well as our food being too soft and lacking in Vitamin C.

I have tried to bring out a few points that you might not consider this time a loss, but as they told the preacher who came to substitute, when asked how long he could talk, he was told they never saved any souls after twenty minutes.

THE MEDICAL PROFESSION AND COSMETICS

Not long ago newspapers contained the announcement that the *American Druggist*, a trade journal devoted to the pharmaceutic industry since 1871, had been added to the series of publications owned and controlled by the International Publications, Inc., of which William Randolph Hearst is president. Almost coincident with this announcement, the policy of that periodical seems to have changed from that of one which aimed at—even if it did not always hit—scientific co-operation between the pharmaceutic industry and the medical profession to one devoted largely to attacking scientific medicine and the usefulness of the physicians. The issue for November, 1927, contains a somewhat satiric comment concerning the medical profession by O. O. McIntyre, whose first name has been alleged to be "Oracular." It contains also an article by one Alice (Hyphen) Esther Garvin of New Haven, Conn., who, according to the editor, "thinks the doctor's idea is all wet." Apparently, Miss Garvin has suddenly developed the quaint notion that the American Medical Association is endeavoring to secure legislation which will make it necessary for druggists to sell cosmetic preparations only on prescription. This extravagant straw man the lady then devastates with ridicule. The American Medical Association is holding strictly to its policy of protection of the public in all matters related to health, asking only that the presence of danger-

ous ingredients in the few cosmetic preparations that contain them be so indicated as to give the public the opportunity of knowing what risks it may run in using them. Miss Garvin's article is full of ridiculous insinuations relative to the motives of the medical profession, of misstatements relative to medical organizations, and of warnings not justified by any actual evidence. Perhaps the *American Druggist* is trying to build circulation by sensationalism—a process not unknown in the other publications of William Randolph Hearst—*Jour. A. M. A.*, Nov. 19, 1927.

EFFECTS OF OBSTRUCTIVE LESIONS OF COMMON DUCT OF LIVER

E. Starr Judd and Virgil S. Counseller, Rochester, Minn. (*Journal A. M. A.*, Nov. 19, 1927), conclude that stones in the common duct and benign traumatic stricture, by reason of their longer duration and associated chronic cholangitis, produce only moderate hydrohepatosis and varying degrees of biliary cirrhosis. The gallbladder is contracted. Malignant stricture of the common duct is associated with marked hydrohepatosis and parenchymal atrophy but with little or no biliary cirrhosis. The gallbladder is usually markedly dilated. Courvoisier's law applies as well to the intrahepatic biliary system as it does to the gallbladder and common duct, and the condition of the latter is an index of the changes in the former. The parietal sacculi are a factor in harboring chronic infection, and the early relief of obstruction is essential.

TRIGEMINAL NEURALGIA

Limited or subtotal section of that portion of the sensory root which supplies the portion of the gasserian ganglion and its corresponding division, through which the pain is referred, is again urged by Charles H. Frazier, Philadelphia (*Journal A. M. A.*, Nov. 19, 1927), as the operation of choice in cases of trigeminal neuralgia. Subtotal section of the sensory root as applied to the second and third division is a matter of recent adoption by Frazier and is not, therefore, recommended without reservations. An experience with nearly 1,000 cases is offered as the basis of these recommendations.

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Healthful, Prosperous, and Happy NEW YEAR

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EDITORIALS

THE DAVENPORT COLLECTION OF BOOKS

The munificence of Dr. James Henry Davenport has recently enriched the Library of the Rhode Island Medical Society with a collection of books which is, so far as we know, unique in this country. Containing already over twelve-hundred volumes and assured of still more through the future kindness of its donor, this splendid collection comprises the extra-professional writings of physicians and surgeons. It has found an abiding home in the Miller Room of the Library. For generations to come it will be a symbol not of Dr. Davenport's industry and generosity only, but also of that modest culture which in him has embodied the finest traditions of our great profession.

"My interest in this subject," says Dr. Davenport in the beautiful catalogue volume which describes the collection "was first aroused when, as a student under Dr. Oliver Wendell Holmes in the Harvard Medical School, I learned to respect not only his medical wisdom but his sound philosophy of human nature. The breadth of his sympathies and the wide range of his genius proved so alluring that I began to explore the field of literature to see what other doctors had done similar things. This led to the beginning of my library, which has grown steadily as scarce editions of early books became available and as the younger generation of doctors has produced its full share of authors." With what success through all these years Dr. Davenport has explored the field of literature and with what loving care he has gathered the literary children of physicians his collection gives eloquent testimony. The Foreword of the catalogue bears the date of March 17, 1926, which arouses the pleasant fancy that in deciding to present his books to the physicians of Rhode Island, Dr. Davenport was somehow influenced by a fairy sprite who whispered to him the words of the ancient Irish proverb that "A thing is the bigger for being shared." For indeed is it not true that we do but half enjoy our books until we have lent or given them to our friends.

Here, then, in this quiet room, only a few steps removed from the bustling traffic outside, one may enter another world to commune with the sweet

high sounding things that physicians say when as poets, travellers, artists, historians, dramatists, novelists, essayists, they desert the practice of physic for a while to taste the spring of Helicon or to stroll in the groves of Arcady. Here is Linacre with his stately Latin Grammar in Six Books, to plague the Princess Mary and to delight Sir Thomas More and Erasmus, his very good friends. The Works of John Locke, M.D., stand in sober array, wherein you may read Concerning Human Understanding and other such-like weighty matters. Francois Rabelais who died in Paris in 1553, through four volumes of racy Renaissance wit and humor, will be only too pleased to chat with you, and so also will Sir Thomas Browne, a more sedate and safer man, who owes so large a debt to Sir William Osler. Tobias Smollett, if you be not too anxious to run as you read, will accompany you on Travels Through France and Italy, beguiling you the while with Observations on Character, Customs, Religion, Government, Police, Commerce, Arts, and Antiquities. John Keats enlists your sympathies in his Letters and your admiration in his Songs. In matters nearer home there is A History of Rhode Island Ferries—1640-1923, by Anna Augusta and Charles V. Chapin and a History of the Town of East Greenwich—1677-1877, by Daniel Howland Greene, a popular homeopathic physician in his day. And so one might go through the volumes of this remarkable collection, discovering something to illustrate the infinite variety of literary gifts among physicians who have strayed out of the realm of medical practice.

In presence of these, as of all good books, one knows that, contemporary smart frivolities notwithstanding, there are still eternal values. From one of the shelves the writer took a volume of Henry Vaughan's Sacred Poems. In it he found expressed, in some fashion, the feelings aroused by a visit to this room, henceforth to be a literary shrine for Rhode Island physicians. Addressing Fortune, Vaughan remarks,
 "I care not for your wondrous hat and purse!
 The world's my palace. I'll contemplate there.
 And make my progress into every sphere.
 The chambers of the aire are mine, those three
 Well furnished stories my possession be.
 I hold them all *in capite*, and stand
 Propt by my fancy there. I scorn your land,

It lies too far below me. Here I see
How all the sacred stars do circle me."
And if so it happen when contemplating this
splendid collection of books, we feel, with Henry
Vaughan, that the sacred stars of the medical
firmament do circle us, making the world our
palace, we shall remember that for this we are
indebted to Dr. Davenport, of whose achievement
we can never be too proud, for whose largess we
can never be too grateful.

ATTENDANCE AT MEDICAL MEETINGS

The Rhode Island Medical Society and the Providence Medical Association have always endeavored to arrange interesting and worthwhile programs for their meetings, and yet the attendance at these meetings is small when one considers the membership of the organizations. There are always a certain number of the "Old Guard" who faithfully attend the meetings. These are the men who are always giving of their best effort to all organized service for the public good. By their presence at the meetings they set a good example and I am sure they would all tell you that they get something from the meetings. If anyone stays away from the meetings because they are not interested in the program, it is as much their fault as it is the officers or committees of the organizations, because they do not themselves offer to present worthwhile papers or make constructive suggestions as to other papers or speakers to improve the value of the programs. The officers and committees always welcome the suggestion of material to be presented or the names of speakers who have a message to give us and who can be obtained. Some of the members who do not attend are, of course, extremely busy men, but if you notice those who do attend regularly you will find that most of them are also extremely busy men, yet they can always find time to do things that they consider worthwhile. There are many doctors in Rhode Island of long experience who, if they would overcome their inhibitions, could present papers that would be very valuable to all members. There are others of fewer years of experience who, nevertheless, have done interesting med-

ical work and seen unusual cases and for the benefit of the rest of us they should make an effort to contribute to the general welfare of the medical profession in Rhode Island.

We have not in Rhode Island a medical school to spur us on to increased medical efforts, but we have a splendid professional body that needs from time to time only to be reminded of their responsibilities and opportunities to increase their own professional stature and to develop the organizations to which they belong.

With the New Year, let us all make a resolve to give of our utmost to the profession by contributing to the Societies' programs and especially by attendance at the meetings.

PHYSIOTHERAPY

The art of healing the sick and injured should include every tried measure of treatment. From the time of the earliest Persian physicians until very recent years drugs constituted the major part of the doctor's armamentarium. Hundreds, even thousands, of preparations have been employed. For every symptom and disease there was one or more specific remedy. Sometimes drugs were used along with incantations for their effect upon the body and the banishing of evil spirits which were thought to be responsible for disease. Even today the native doctors of China still employ weird and fantastic concoctions in the treatment of their patients.

The faith in drugs has been shaken only during recent years. Dr. H. C. Wood of Philadelphia, father of experimental therapeutics and pharmacology, has been dead barely twenty years. He questioned the empirical value of many drugs and began experiments on animals in an out building of his home as a laboratory. He wanted to learn the exact physiological action of drugs. Osler did a great service in putting the treatment of disease on a scientific basis. He was called a drug nihilist, and was the object of serious criticism during the earlier years of his career.

Drugs and chemicals will always be indispensable for relieving symptoms and curing disease, but there are other measures which are equally useful. The treatment of disease has been put,

during the last fifty years, on a more scientific basis following the acquisition of scientific facts concerning physiological and pathological processes. There are many physio-therapeutic procedures which are extremely useful in treatment and a few are actually curative. Some of these procedures are not new. The early Greeks built temples where water cures were employed. Many years ago the Germans revived and elaborated water cures, and there are today scattered all over the world resorts at famous springs to which people flock for the cure of chronic diseases and rejuvenation of jaded bodies.

There are a number of physiotherapeutic measures whose value is fairly established in the treatment of disease. The use of water both externally and internally is extremely valuable. Heat, derived from a poultice, hot water bags, baking apparatus and light, has wide usefulness. The X-ray, quartz light, ultra violet rays and radium are invaluable for certain conditions. Massage is a well recognized procedure of great value. These and other physical means of treating disease have not received the attention of physicians as much as they should until recently. On the other hand, all these means of treating sick or injured persons may be abused. Many of them have been used and abused by non-professional persons out to make a dollar. Even physicians have been known to prostitute their use for the same purpose. It is quite natural to turn to them in the treatment of chronic ailments for which little can be done. However, physicians are learning more and more of their uses and limitations.

Heretofore physiotherapy has been carried out in sanitariums conducted either by laymen or poor doctors. There have been a few where the treatment has been in charge of reputable physicians. It is encouraging and most commendable that hospitals are now establishing physiotherapy departments. Not only are they valuable for the treatment of patients but have great educational value to the physicians. The value of physical measures can be gauged and their uses be placed upon a sound scientific basis. Perhaps these departments will help discourage the habit which many supposedly intelligent people have of consulting chiropractors and other cults who know little or nothing about bodily ailments.

THE MEDICAL LIBRARY

The library of the Rhode Island Medical Society has recently been enriched by the addition of a unique collection of books representing years of care and effort on the part of their generous donor, Dr. Davenport. This collection comprises the non-medical works of medical men, and even a hurried inspection proves the immense literary versatility of members of our profession. The library is to be congratulated on its acquirement of this addition to its treasures, which are many and varied. The chief drawback to the use of the library is the lack of any sort of catalogue, a lack which should be remedied as soon as possible. A previous attempt to obtain a catalogue resulted in an estimate of expense which was felt to be far too great, but it was not generally realized that this expense would have been due to refinements of cataloguing which are not essential. A simple subject index and index of authors could be provided at only a moderate cost, and it is to be hoped that some movement in this direction can be made in the near future.

VACCINATION AGAINST SMALLPOX

BY THE PRICK METHOD*

BY HOWARD F. ROOT, M.D.
BOSTON, MASS.

The unusual prevalence of malignant smallpox in this country during the past winter and spring led to the vaccination of fifty-one persons at the New England Deaconess Hospital. The group consisted of forty-eight nurses either in training or graduates, a doctor and a clerk.

The vaccine used was obtained by mail from the Massachusetts Board of Health and kept in a refrigerator at the hospital. It was used within a few days of its receipt.

The method of vaccination employed was one recommended by Dr. James P. Leake of the United States Public Health Service who states that it is only slightly modified from the method used by Kinyoun and subsequently by Dr. Hibbert Hill of London, Ontario. The skin of the upper arm was cleansed thoroughly with alcohol or acetone, dried with sterile gauze and a drop of

*From the New England Deaconess Hospital.

the vaccine placed on the surface. The needle, sterilized by flaming, was held parallel to the surface of the skin with the point in the drop of vaccine. The skin was then placed on tension by encircling the upper arm with the hand and drawing the fingers apart so that the outer layer of the epidermis would be slightly separated. Then the vaccine was patted into the skin by raising and lowering the needle rapidly thirty times. This method mechanically forces the vaccine down into the prickle cell layer without drawing blood, in most cases. If a three-cornered needle be used, however, usually the skin is slightly scarified. The area covered by the vaccine was then wiped off with a sterile sponge and the patient discharged without any covering over the area of vaccination.

In cases giving a primary take the pustule appeared at its maximum at the 8th to 12th day, varying in size from one-half centimeter to one and one-half centimeters in diameter. The area of inflammation and swelling about the pustule varied in width from one centimeter to five centimeters and there were in many instances swelling of the axillary and in at least one case, supraclavicular glands. Two nurses were off duty for part of one day, because of fever and malaise, consisting of headache, backache, lack of appetite and axillary tenderness. All subjects with primary takes had at least one or two days of malaise, but no severe general reactions occurred. Locally in no case did the swelling extend more than eight centimeters from the site of vaccination, nor did secondary infection or suppuration occur.

RESULTS: Some definite reactions occurred in every case. In ten cases there were characteristic immune reactions appearing within twenty-four hours and consisting of the appearance of a red-denied papule, which persisted with slight soreness from ten days to three weeks. This group was vaccinated a second time with the same results. The average period elapsing since the last successful vaccination in this group was eleven years. In every case a history of successful vaccination and a characteristic scar were present.

Seven cases gave an accelerated reaction. The average period elapsing since the last successful vaccination in these cases was twenty years. In thirty-four cases a typical primary take was obtained. Of these five had never been vaccinated before. The average period elapsing since the

last successful vaccination in the other twenty-nine was sixteen years.

Twenty-four of the nurses in the group of primary takes had good scars. This group showed clearly that the vaccine procured from the State Board of Health by mail and kept in a refrigerator maintained its potency. Several of the persons in this series had been vaccinated repeatedly without a take during the last few years, yet they gave primary takes at this time. One nurse had been inoculated seven times without a single take in the last five years yet at this time gave a typical primary take.

The scars resulting in this series were unusually slight. In most cases they were shallow, about one-half centimeter in diameter and showed the characteristic pocking. The explanation of such slight scarring consists of the facts that most cases had been vaccinated before, but also that this method gives a smaller area of inoculation without the maceration and secondary infection induced by a bandage or cover.

Re-vaccination should be practiced more generally. The deaths of two nurses in Washington exposed to hemorrhagic smallpox should bring home to physicians the fact that virulent smallpox is still a present-day menace. Re-vaccination at intervals of five to seven years will both protect the patient's life and save him from a painful arm at second and later vaccinations.

This method of vaccination is recommended for the following reasons:

1. It is less painful than the method of double scratches.
2. It gives a smaller pustule and smaller scar.
3. Severe reactions occur less frequently.

SOCIETIES

RHODE ISLAND MEDICAL SOCIETY

COUNCIL

The regular meeting of the Council was held November 22nd, 1927, at 4:30 P. M., at the Medical Library, the President, Dr. Norman M. MacLeod, presiding.

The Treasurer's Budget as follows was read by the Treasurer, and it was moved that the Council recommend to the House of Delegates the adoption of the Budget.

BUDGET, 1928

Collation and Annual Dinner.....	\$650.00
Expense of Secretary (Sec. hire).....	75.00
Delegate to American Medical Association	100.00
Printing and Postage.....	125.00
Fuel	600.00
Electricity	75.00
Gas	50.00
Telephone	75.00
City Water	10.00
House Supplies and Expenses	400.00
House Repairs	300.00
Librarian	1,560.00
Janitor	600.00
Books and Journals (Including Ely Fund, \$74)	150.00
R. I. Medical Journal.....	400.00
Safe Deposit	5.00
Insurance Premiums, 3 years	176.25
	<hr/>
	\$5,351.25

INCOME FOR 1928

Annual Dues	\$4,190.00
Interest from Harris Fund	290.00
Interest from Ely Fund	74.00
Providence Medical Association.....	450.00
Use of Building	100.00
From Journal	400.00
	<hr/>
	\$5,504.00
Balance in Bank November 1, 1927.....	\$2,362.85

HARRIS FUND

Southern Illinois Light & Power Co	\$120.00
Pacific Gas & Electric Co.....	60.00
Iowa Power & Light Co.....	110.00
	<hr/>
	\$290.00

Dr. Champlin moved, seconded by Dr. Jones, that the act of the Treasurer in investing the Dr. Frank L. Day Fund of \$3,000.00 for the purposes of the Library be approved. So voted.

Adjourned.

DR. J. W. LEECH, *Secretary*

HOUSE OF DELEGATES

NOVEMBER 22, 1927

The regular meeting of the House of Delegates was called to order this day by the President, Dr. Norman M. MacLeod.

The Treasurer's Budget was read as it had been presented to the Council, and as the Council recommended that the House of Delegates adopt the same, it was so voted after motion of Dr. C. W. Higgins, seconded by Dr. W. P. Buffum, Jr.

Notification of the gift by Dr. J. H. Davenport of his library to the Rhode Island Medical Society was made by the President. This library of approximately 1,100 volumes comprises the literary works of medicine men in fields other than strictly scientific or medical subjects, and represents many years of devoted thought and interest on the part of Dr. Davenport. It represents what is probably a unique library in this country, and the Society is most fortunate in having been selected by Dr. Davenport as the custodian of this remarkable library. It was voted that the Society accept with profound appreciation Dr. Davenport's most generous gift and that the thanks of the Society be conveyed to him. Suitable shelf room for this library has been made available in the Miller Room of the Medical Library Building, and the Fellows of the Society will have easy access to this unusual and delightful collection of books by medical men.

By motion of Dr. Mowry, seconded by Dr. Jones, it was voted that dues for the ensuing year be fixed at \$10.00.

It was voted to accept the invitation of the Rhode Island Dental Society to attend the Clinics of the Society to be held January 10th to 13th, 1928, as part of the commemoration of the 50th anniversary of the founding of the Rhode Island Dental Society.

A communication from the Child Welfare Division of the State Board of Health asking for the approval of this Society for the institution of a survey of maternal deaths to be conducted by the United States Department of Labor was presented by the President. The purpose of this survey is to determine causes of maternal mortality, and the data desired by the Department of Labor will be obtained solely through the attending physicians and not by inquiry in the homes. It is hoped and expected that the medical profession of Rhode Island will appreciate the honor that the Department of Labor offers this State in selecting Rhode Island as one of the States in which to make this survey. It was voted that the Rhode Island Medical Society endorse the institution of the survey of maternal mortality by the Department of Labor,

and ask the co-operation of the members in furnishing data for this survey.

A communication from the American Medical Association with reference to plans of the New England Anti-Vivisection Society to introduce a bill in Congress for the purpose of exempting dogs from experimental purposes by physicians was presented by the Secretary. In anticipation of the action of the Society in regard to this subject, the Secretary had communicated with the Senators and Representatives from Rhode Island asking their careful scrutiny of this bill, and it was voted that the act of the Secretary be approved.

A communication from Dr. S. A. Knopf asking for the endorsement by this Society of a resolution before the House of Delegates of the American Medical Association relative to Birth Control was presented by the President. In effect, this resolution provides for the alteration of the existing laws so that physicians may legally give contraceptive information to their patients in the regular course of practice. It was voted to refer this matter without comment to the delegate of the American Medical Association, Dr. Hammond.

Adjourned.

J. W. LEECH, M.D., *Secretary*

The regular quarterly meeting of the Rhode Island Medical Society was called to order at 4:02 P. M., December 1, 1927, at the Medical Library, the President, Dr. Norman M. MacLeod, in the chair.

The minutes of the September meeting, and the minutes of the meetings of the Council and the House of Delegates were read by the Secretary.

Dr. MacLeod announced the gift of a library of approximately 1,100 books written by medical men upon topics other than strictly medical subjects. This unique library, the result of many years' collecting on the part of Dr. Davenport, represents the literary activities of medical men in the fields of poetry, romance, venture, fiction, etc.

Attention of the Fellows was also called to the action of the House of Delegates in approving the proposed survey of maternal deaths under the auspices of the United States Department of Labor.

The invitation of the Rhode Island Dental Society to the Fellows of the Rhode Island Medical

Society to attend the clinics to be held in connection with the former's 50th anniversary was extended to the Fellows.

The following papers were read and discussion of the papers was presented by Doctors Chapin, Richardson, E. V. Murphy, Hasbrouck and Richards.

Papers:

1. "The Physician and Public Health," Norman M. MacLeod, M.D., President R. I. M. S.
2. "Accomplishments in the Prevention of Diphtheria by the State," Byron U. Richards, M.D., Commissioner of Public Health of R. I.
3. "Quarantine of Scarlet Fever Governed by Throat Cultures," Edward V. Murphy, M.D., Health Commissioner of Newport.

Following adjournment, a collation was served.

Respectfully submitted,

J. W. LEECH, *Secretary*

PROVIDENCE MEDICAL ASSOCIATION

The regular monthly meeting of the Providence Medical Association was held at the Medical Library, 106 Francis Street, Monday evening, December 5, 1927, at 8:45 o'clock, with the following program.

Election of officers for 1928:

President—Edward S. Brackett, M.D.

Vice-President—Arthur H. Ruggles, M.D.

Secretary—Peter Pineo Chase, M.D.

Treasurer—Charles F. Deacon, M.D.

For Member of the Standing Committee for five years—Henry J. Hoye, M.D.

For Trustee of the Rhode Island Medical Library for one year—N. Darrell Harvey, M.D.

For Reading Room Committee—George S. Mathews, M.D.; Guy W. Wells, M.D.; Elihu Wing, M.D.

For Delegates to the House of Delegates of the Rhode Island Medical Society—E. S. Cameron, M.D.; W. H. Higgins, M.D.; A. J. McLoughlin, M.D.; P. P. Chase, M.D.; F. E. McEvoy, M.D.; A. Corvese, M.D.; M. Adelman, M.D.; P. C. Cook, M.D.; C. W. Skelton, M.D.; R. S. Wilcox, M.D.; J. W. Sweeney, M.D.; P. Appleton, M.D.; W. Pickles, M.D.; A. A. Barrows, M.D.; G. H. Crooker, M.D.; C. H. Jameson, M.D.; W. S. Streker, M.D.

Papers read before the Association were:

1. "Aids to Greater Safety in Operation," Dr. John W. Keefe.

2. "Focal Infection and Its Relation to Ophthalmology," Dr. Frank J. McCabe.

3. "De Senectute," Dr. William R. White.
Collation followed.

DR. PETER PINEO CHASE
Secretary

PAWTUCKET MEDICAL ASSOCIATION

The regular monthly meeting of the Pawtucket Medical Association was held on Thursday evening, November 17, 1927, at the Pawtucket Golf Club House.

The speaker of the evening was Dr. Reuben Bates of Providence. His subject was, "Milk and Its Relation to Public Health."

Following a discussion of the paper, a vote of thanks was accorded Dr. Bates.

Meeting adjourned and collation was served.

LESTER J. GILROY, M.D.
Secretary

HOSPITALS

The following is a copy of the minutes of the Memorial Hospital Staff meeting held December 1, 1927:

"Meeting called to order by President Wheaton following a most interesting lecture by Col. H. Anthony Dyer. Col. Dyer received a vote of thanks on behalf of the staff by President Wheaton. Dr. A. T. Jones reported a case of Thrombosis. Dr. E. Wing reported a case of Typhoid following Pneumonia. Dr. J. Kenney reported case of Brain Abscess following removal of teeth. Case came to autopsy and reports verified. Meeting adjourned at 10:40 P. M.

JOHN F. KENNEY, M.D.
Secretary

ANNOUNCEMENT

THE AMERICAN BOARD OF OTOLARYNGOLOGY

An examination was held in Detroit on September 12th during the session of the American

Academy of Ophthalmology and Otolaryngology. One hundred and two applicants appeared for examination, with .107 per cent. failures.

An examination was held in Memphis on November 14th, preceding the session of the Southern Medical Association, with .127 per cent. failures.

In the course of the past year, three hundred and sixty-nine applicants have been examined.

In 1928, examinations will be held in Minneapolis on June 11th, at the session of the American Medical Association, and in St. Louis on October 15th, during the meeting of the American Academy of Ophthalmology and Otolaryngology.

Prospective applicants for certificates should address the Secretary, Dr. W. P. Wherry, 1500 Medical Arts Building, Omaha, for proper application blanks.

DR. W. P. WHERRY
Secretary

BOOK REVIEWS

ASTHMA, HAY FEVER, URTICARIA AND ALLIED
MANIFESTATIONS OF ALLERGY, *Duke, C. V.*
Mosby Co., Publishers—

is a book of great value to the physician interested in a hard survey of the subject of asthma, urticaria, hay fever and vasomotor rhinitis, and the emphasis is placed on underlying factors and varied symptomatology of allergic diseases. It is a very timely book and points the way to a more rational conception of this subject.

SUBMUCOUS ENDOCAPSULAR TONSILLAR ENUCLEATION, *Miller, F. A.* Davis Co., Publishers—
should be of great interest to those who practice dissection of tonsils. It is a plea for tonsillar dissection without resulting cicatrization of the throat, and gives in detail an operative technique to prevent this.

MISCELLANEOUS

IMMUNITY IN TUBERCULOSIS

S. A. Petroff, Trudeau, N. Y. (*Journal A. M. A.*, July 23, 1927), asserts that the method of vac-

cination with living, virulent tubercle bacilli affords a means whereby immunity can be set up with apparently a very small amount of material. The dosage can be so regulated that a massive infection can be avoided. A mild disease without any clinical manifestation is actually being produced. However, it must be remembered that in order to keep this immunity the inoculations must be continued. In other words, the focus with living organisms must persist for the continuance of a satisfactory immunization. It means that to obtain such immunity the price of actual infection must be paid. And again, in dealing with virulent organisms, one never knows what may happen in the individual when he is subjected to intercurrent disease. Supposing an immunity has been established with living, virulent organisms, what will prevent the breaking down of this resistance and the dissemination of the tubercle bacilli to some distant part of the party which has lost its immunity. Petroff believes that dead tubercle bacilli or some of their derivatives can be used safely and effectively in immunizing the human race.

BROADCASTING BUNCOMBE

Whatever else may be said of the quack and the faddist, they must be given credit for enterprise. The sheet anchor of the dispenser of pseudomedical buncombe, no less than of the out-and-out quack, is publicity. In the not very distant past, the quack and the faddist had the entrée—at advertising rates—to the majority of the newspapers of the country, and thus was made the point of contact between sucker and suckee. But, gradually, public opinion forced at least the better class of newspapers to be more circumspect in the space that they sold to those who offered panaceas for human ailments, and today the majority of newspapers of wide circulation do not cater to the business of the medical faddist or the quack. With that avenue closed, it became necessary for these gentry to seek other fields of publicity, and it was but natural that they should turn to the latest wonder of modern science, wireless telephony—the radio. This field had three elements in its favor: first, its novelty; second, the fact that the spoken word is even more effective than the written word in carrying conviction; third, and most important, that the business of broadcasting is

in its infancy and its code of ethics is naturally, low. Broadcasting in the United States is a commercial venture. Generally speaking, the broadcasting station is out to sell time on the air, just as the newspaper is out to sell space on paper. It is natural, therefore, that these stations should look with favor on any commercial organization that is willing to pay the price the station asks for puffing its particular line of goods. Thus it is that we who are radio fans have our ears assailed almost nightly with some pseudomedical fad, or the exploitation of some crude piece of quackery. One of the earliest entrants into this field was the "Palmer School of Chiropractic," which has its own broadcasting station, WOC, at Davenport, Iowa, whose programs, unobjectionable in themselves, keep before the radio listener the fact that there is an alleged educational institution devoted to the "science" of back-pushing. Then there is that enterprising quack who specializes on "rejuvenation" operations and who practices, apparently, without let or hindrance by the state authorities, from Milford, Kansas—John R. Brinkley, who owns and operates KFKB. Station WHT some months ago was broadcasting with great regularity the alleged virtues of a "patent medicine," Salicon, a preparation that the A. M. A. Laboratory found to be essentially a mixture of 3 grains of aspirin and 2 grains of magnesium carbonate. WJAZ, not so long since, was telling the radio world the marvels of that ingenious faker Professor Scholder, who professes to grow hair on bald heads, but who was unable to differentiate dyed twine from human hair. Over KTNT of Muscatine, Iowa, comes the story of the "Tangle Institute," which has a sure-fire cure for varicose veins, the invention, it appears, of one Dr. Charles L. Barewald of Davenport. WJBT of Chicago has described, via the ether, the marvels and virtues of the magic horse collar, the "I-on-a-co," of quack Wilshire. The Voice of Labor—WCFL—permits Dr. Percy Lemon Clark of Chicago, "a world authority on dietetics and food combinations," to broadcast health misinformation. Clark operates a "Health School" on "Sanatology" and tells the world that "acidosis and toxicosis are the two basic causes of all disease." Over the same station—WCFL—comes also the "Restoro," a base imitation of Wilshire's magic horse collar, and possessing as much therapeutic value as an empty tomato can with a string tied to it. Some

day possibly the broadcasting business will grow up, and when that time arrives, it is to be hoped that it will have adopted a code of ethics at least as high as that of the average newspaper.—*Jour. A. M. A.*, Nov. 19, 1927.

PREVENTION AND TREATMENT OF POSTOPERATIVE COMPLICATIONS IN ABDOMINAL SURGERY

An analysis of the factors which are concerned in the causation of operative mortality convinces G. W. Crile and C. C. Higgins, Cleveland, (*Journal A. M. A.*, Nov. 19, 1927), that, by judicious care, a fatal termination might have been avoided in many instances. The postoperative course in any case is controlled by three factors: (1) the status of the patient (a good or bad risk); (2) the type of operation performed, and (3) the measures employed to prevent complications. The operative factors which must be considered in their relation to postoperative complications are: (a) the type of anesthesia, (b) the extent of the operation, and (c) the organs and tissues involved. Preventive measures against complications are discussed. The prevention of certain specific complications which may follow abdominal operations, such as ileus, acute gastric dilatation, vomiting, peritonitis and hemorrhage, is outlined.

MANAGEMENT OF SOME COMPLICATIONS FOLLOWING ABDOMINAL OPERATIONS

Frank H. Lahey, Boston (*Journal A. M. A.*, Nov. 19, 1927), says that unexpected and, as a rule, preventable postoperative complications make up a large part of the mortality which follows deliberate operative procedures on persons in good health and presumed to be reasonable surgical risks. These complications are at least in a considerable measure avoidable and, having arisen, assume serious aspects in proportion to the lateness with which they are discovered and adequately treated. Such complications as wound infection, wound rupture, intestinal obstruction, postoperative distention, postoperative hemorrhages, and obstructive jaundice are discussed. Each is fully considered as to cause, symptoms and treatment. Regarding the postoperative employment of transfusion, Lahey has only two rules: (1) the

time to do transfusion is when one begins to debate as to whether or not it should be done; and (2) a method should be used that, at least for the individual employing it, assures that the blood and all the blood is actually introduced into the circulation. An annoying lesser complication is hiccup. It is not only a distressing symptom but when prolonged may so consume vitality that it becomes the deciding factor in the balance between recovery and death. Lahey has had very gratifying results in the treatment of this condition by carbon dioxide inhalation. No special apparatus is required. A small funnel is attached to a tube leading to an ordinary tank of carbon dioxide. The valve on the tank is turned just far enough to give a distinct odor of the gas which emerges. The patient inhales the gas from the funnel until a mild hyperpnea results. The hiccup usually stops after eight or ten breaths. The hiccup may recur after an interval, when the procedure may be repeated.

ONE THOUSAND OPTIC CANALS

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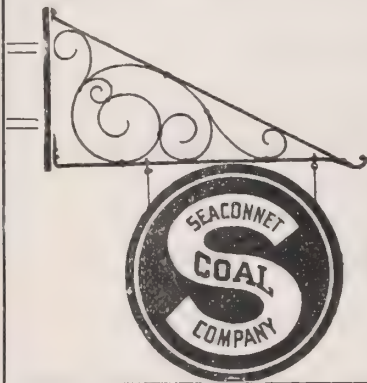
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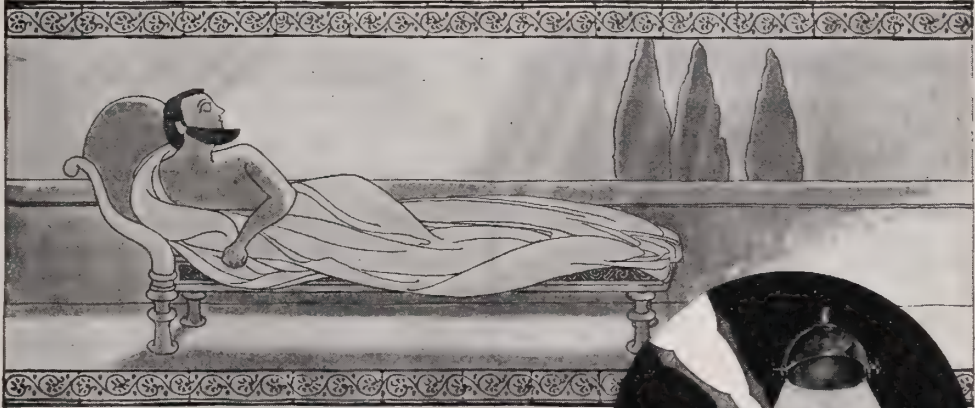
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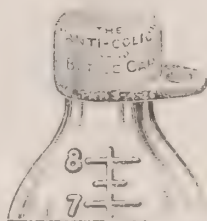


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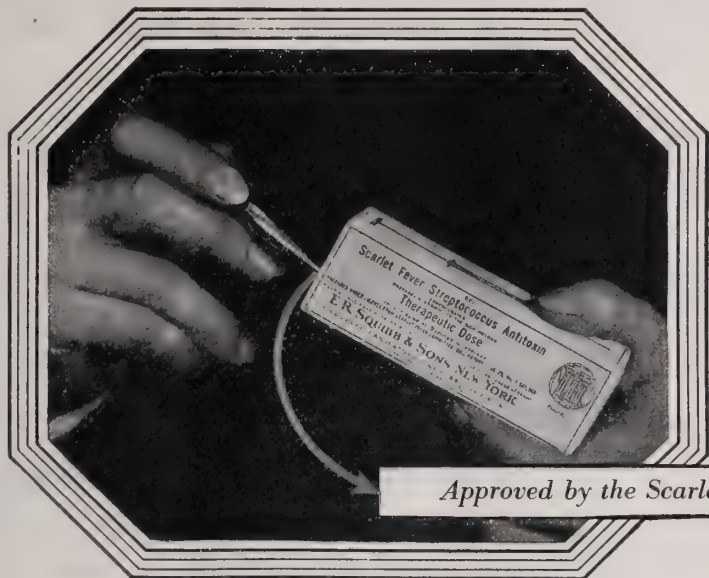
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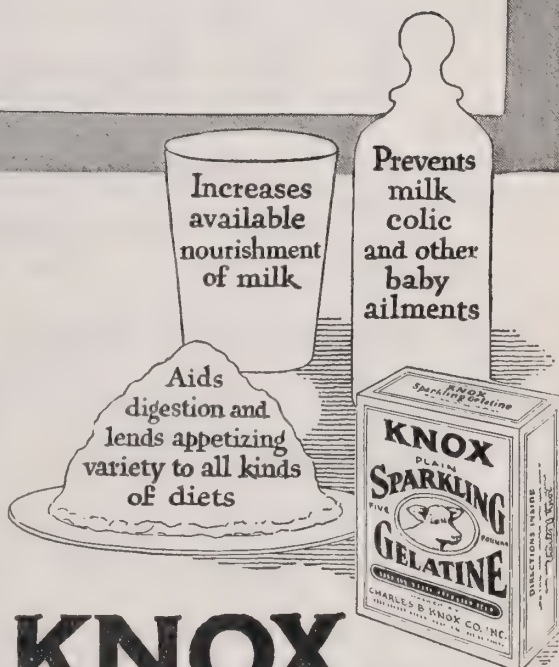
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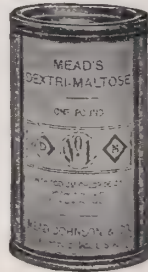
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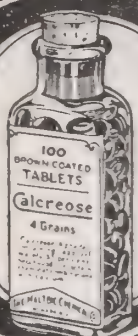
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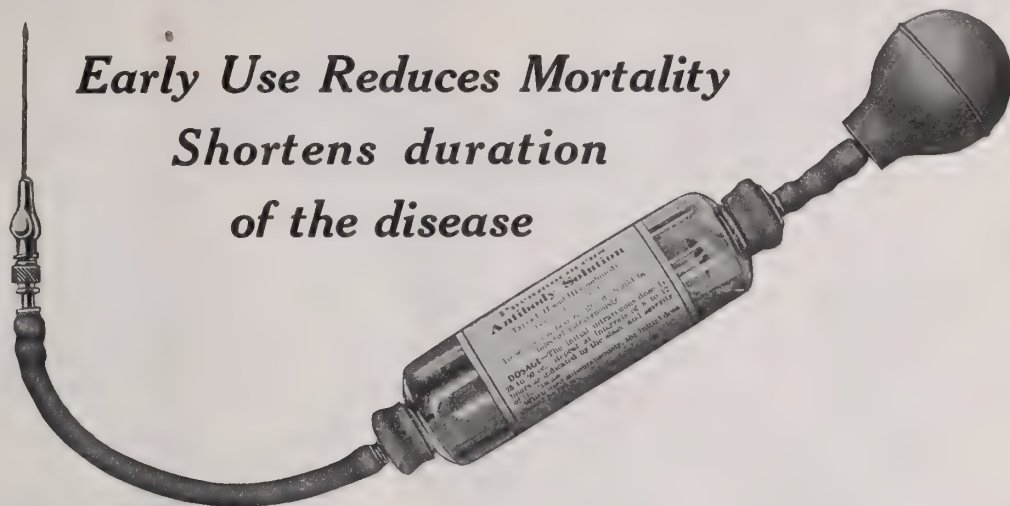
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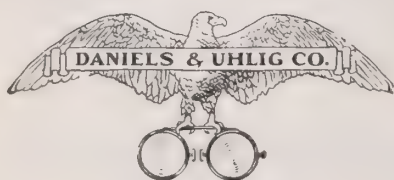
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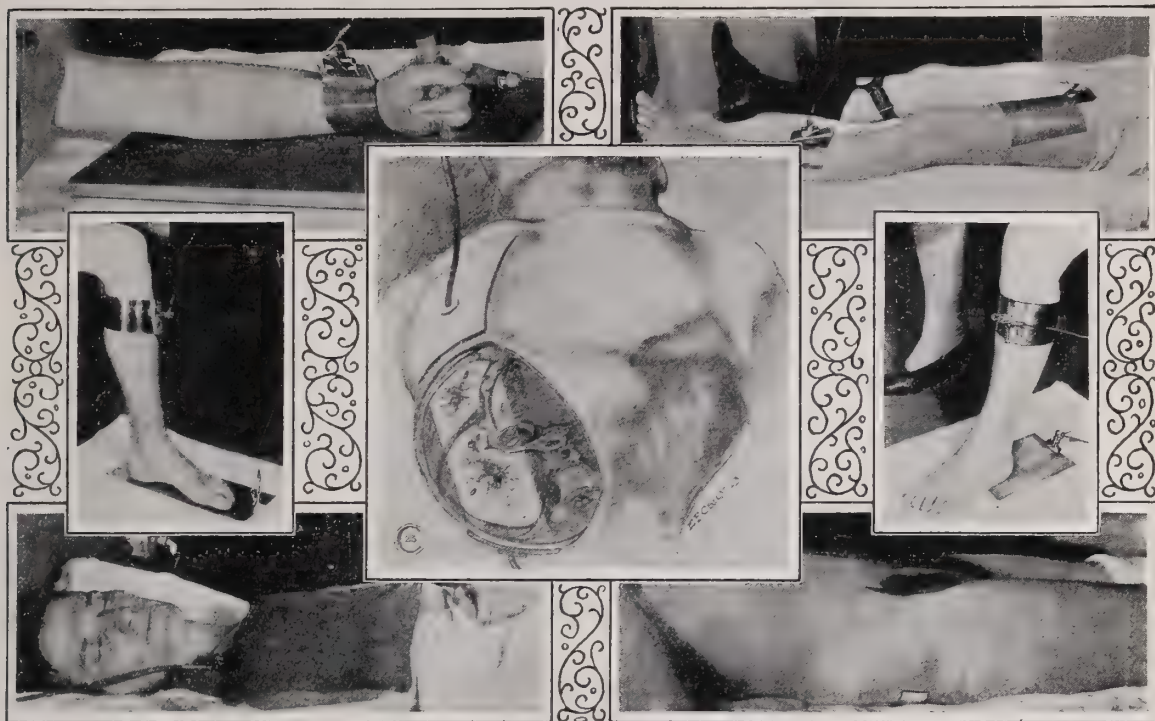
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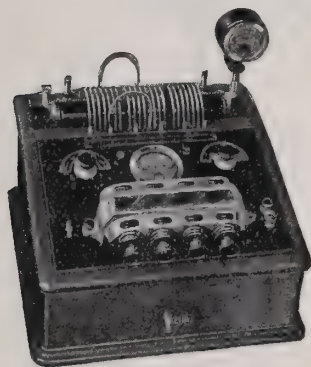
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Issued Monthly under the direction of the Publication Committee

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ORIGINAL ARTICLES

SANITATION OF SUMMER CAMPS*

BY ELMER W. CAMPBELL, D.P.H.
- AUGUSTA, ME.

The sanitation of summer camps is a problem which has been with us for a number of years but on which very little work has been performed by the Health authorities until the last decade. Previous to the coming of the automobile the general public traveled very little over the highways excepting for short distances and most of their stops were made at regular places of public entertainment, such as hotels and inns. The universal use of automobiles has altered these conditions to such an extent that now many families are apt to start out at the beginning of the summer season and travel from one end of the country to the other, stopping wherever fancy may dictate, either camping out at regular camping grounds or possibly in any open spot that may be available. To accommodate this vast hoard of campers thousands of cabins have been erected and tenting grounds opened up by private individuals and frequently by municipalities.

Another type of camps which have been increasing with great rapidity throughout the country are known as recreational camps, which includes sporting camps, boys, girls and family camps and which are often conducted very much like an open air school combining educational facilities with the benefits of outdoor camping. The necessity for proper sanitation of these various kinds of camps has been impressed on the health authorities in direct proportion to the increase in the number of camps.

In many states the legislative bodies have passed rules and regulations or laws governing the sanitary arrangements in the various kinds of camps. In Maine the last legislature passed a law requiring that all recreational camps, overnight camps,

roadside lodging and eating places must secure a license from the State Department of Health in order to carry on their business. The regulations pertaining to public eating places must be observed in order that a license may be secured.

The types of camps which are today causing us a great deal of concern and which need very careful supervision as to sanitary arrangements are the vacation camps, especially those conducted for boys, and girls and the automobile camps.

Too great care cannot be exercised in disease prevention measures when one considers that there are within the State of Maine alone, two hundred and thirteen boys' and girls' camps accommodating thousands of children whom we hope will be greatly benefited by their stay in the camps and will return home healthy and strong, carrying no possible infection to the schools or their home communities.

In 1881 the first camp to be established for boys was started in New Hampshire and from that humble beginning was developed one of the great summer industries in some of our northern states. Of course, there are numbers of camps in other states of the union and in Canada but not in the proportion that they exist in the northern states. The first camp was crude and the boys lived "Next to Nature."

The reception of the idea of summer camps by educators and schoolmen was very slow at first. Although slow it was progressive and finally the idea of the summer camp for boys spread to those interested in the advancement of boys' work and soon other camps were established. These camps have been largely maintained for healthful recreation, but there are many camps among them where tutoring is done.

The benefit of the boys' camp had been recognized several years before girls' camps were established. Dr. and Mrs. Luther M. Gulick, in 1888, had a camp in Connecticut for their own daughters, and from this grew an idea for summer camp for girls and in 1910 they established the Luther Gulick camps in Maine.

*Read before the New England Health Institute, held in Providence, R. I., September 27th to 30th, 1927.

The real start for girls' camps started in 1902, although something had been done previous to this. The first camp for girls in Maine was the Cobbs Camps established this year, 1902.

That the first camps should have been located in New England on some of our loveliest lakes is only natural. The first camps were naturally started in camping places that had long been favorite haunts. Until within a short time ninety per cent of all camps were in New England, but now they extend from the Atlantic to the Pacific and from Canada to the Gulf, yet the camps in New England outnumber the camps of all the rest of the country. Since the war the number of camps have rapidly increased, perhaps influenced by the benefit which our soldier boys received in our war camps.

Besides the camps operated and owned by private individuals, many organizations such as the Y. M. C. A., Y. W. C. A., Girl and Boy Scout, Church, Red Cross, Salvation Army, Boys' and Girls' Club and many others have established camps.

As a natural result of an increase in camps which has naturally made competition to obtain campers, the grade of camps has gradually increased until at the present time there are millions of dollars invested in this enterprise and millions of dollars are spent by the campers each year.

The camp investment alone in the state of Maine is estimated at about \$5,000,000 and about \$10,000 a day is paid to the farmers of the State during the camping season for milk, butter, eggs, vegetables, etc., besides other money spent by the individual camper and their visitors.

Camp sites have been selected with reference to scenery, bathing facilities, water supply and food supply. Many were built where the only available route to them was by water or the only easy route by this means. The character of the soil did not enter the consideration of the first camps built as they were small and very crude.

It is now recognized that several things enter into the maintaining of a successful camp.

Parents send their children to camp for several reasons; the principal ones are: that they may live out of doors to obtain or maintain strong, vigorous bodies to endure the strain of study incident to the winter months at school, that they may obtain knowledge of woodcraft, athletics,

boating, swimming and other things which build up a strong, vigorous body and mind.

These campers come from every part of the United States, so that when they arrive in our respective states we ought to be sure that they are free from communicable diseases, which means that they should all be examined before leaving home. We ought to be as sure that when they leave from home that they are as free as when they came. It certainly would hurt our states immeasurably if children after returning home from their summer spent in our camps should develop typhoid fever or other diseases or should have these diseases in larger numbers during the summer.

As these camps have increased in number and the numbers of the campers have increased it has been demonstrated that the best milk and purest water should be available and that the disposal of garbage, refuse and sewage is a most important problem. As these camps are mostly located on the shores of lakes, rivers and streams, (a few being on seashores) many of which are tributaries of water supplies, or are actually the water supply of cities and towns; this question of sewerage and sewage disposal is all important. We must protect the water supplies of our cities and towns.

One type of camp where little or no attention has been made to improve sanitary arrangements is the construction or logging camp which is the pioneer camp and is often the forerunner of the people. The construction or logging camp is located far in the wilderness for the purpose of bringing out raw materials to be used in industry. The class of laborers in these camps is not as a rule of particular interest to the general public and formerly very little was done towards their health and comfort. In fact, very little was done to improve sanitary conditions at these camps until epidemics of typhoid fever or small pox brought them to the attention of the health authorities and the danger of polluting the public water supplies of cities and towns was discovered. Most logging camps were constructed on the shores of lakes, streams and rivers which later became sources of water supplies of cities and towns and in some cases epidemics of typhoid fever were directly traceable to cases of this disease in these camps.

When sickness came which was traceable to these camps then people began to realize that they

were not independent workers, but that there was always a certain relationship with all workers and the people in general.

Camp sanitation must include every sanitary arrangement for the comfort of the camper and all arrangements for the prevention of disease. They must be protected from mosquitoes, especially at night, not that directly mosquitoes are a danger to health, but they certainly are a great inconvenience and a nuisance. Besides the protection offered by screening the sleeper, the important thing is to destroy the breeding places for these insects.

Flies are a nuisance and a danger to health. They are spreaders of disease and a danger to the community. Flies are not tolerated, and if found, are an indication that there is some unsanitary condition existing not far away. Many a camp owner has said, "We never have any flies here," yet there are many flies about when looking for them.

The important things to be considered in a camp of any size, are: that the water supply is safe and abundant to take care of the camp needs at any time even in the driest seasons and that the chances of polluting the source of the water supply are reduced to a minimum. Camps obtain their water supply from brooks, natural wells, artesian wells, springs and in some cases from the lakes.

Brook and lake supplies in our state are not recommended as sources of water supplies as there is always opportunity for pollution from careless or irresponsible people which in some cases have resulted in serious illness. It must be known that the milk supply is from accredited tested herds of cattle and handled in clean dairies in a sanitary manner and that there is a proper disposal of garbage and sewage.

The upper few inches of soil is the home of countless millions of bacteria. These bacteria in the natural state are not generally productive of disease in man, although there may be bacteria in soil which if introduced into wounds would cause tetanus, malignant oedema, anthrax, etc., sometimes staphylococci and streptococci. The soil in its natural state is practically free from disease producing organisms and it is only after man has appeared and polluted it with his careless habits is it dangerous to health.

The trail of man is marked and well marked by tin cans, scraps of paper, remnants of wasted

food, garbage, ugly camp sites, fecal deposits, flies and other disgusting reminders of civilization. Primitive man must move his camp at frequent intervals to avoid his own filth and allow nature to clean up after him. Civilized man rapidly soils his vacation camp sites in spite of laws, forest rangers, notices, pleadings and especially the cleansing action of nature for nine months of the year. The soil is capable of taking care of large quantities of organic matter but when it is well burdened it remains polluted and then becomes a danger to health.

It is not only the amount of pollution, but the kind of pollution and also the manner of disposal which plays a very important part, and may endanger health by polluting drinking water or endanger life in other ways.

The soil of the field is called dirt when it gets onto our hands or into our houses and becomes a potential danger when it becomes polluted with human excreta or soil bacteria associated with wound infections. To the sanitarian dirt includes the soil polluted with manure, rubbish and organic wastes of all kinds. It may be the vehicle, but not the source of infection. We know that typhoid fever and other infections do not originate in dirt, but that it favors conditions which spread diseases, whose case may be deposited in the dirt.

Flies and other insects known carriers of infection breed in filth, live in it and spread the infection which may happen to be deposited in it.

Rosenau says that, "Cleanliness is the heart and soul of sanitation. We are inclined to place it even before godliness, for cleanliness of body, cleanliness of mind and soul, and cleanliness of our surroundings are essential to a full appreciation of the spiritual virtues."

When we consider that these boys and girls in our camps are the pride and comforts of their parents and the future parents of other generations it certainly is no small matter to look after them. Camp owners and directors assume heavy responsibilities when they take charge of these people to look after their moral, mental, spiritual and physical welfare. The conditions of life are completely changed from their home environment. The important function of summer camps is to return the boys and girls to their homes with improved health, physique and in a better mental condition.

With several thousand boys and girls in these camps in New England it behooves us to see that they are protected against disease in every way, by proper water and milk supply, proper food properly prepared, that the disposal of sewage and garbage is all properly looked after, and that the bathing beaches are properly protected against pollution and that the bathing load is not exceeded.

A camp site should be selected not only as to good water supply but also with respect to good drainage and good surroundings. The character of the soil is very important. Clay makes a bad soil for camps as it does not afford proper absorption of moisture, and if the season is a rainy one, it is particularly disadvantageous. This kind of soil does not afford proper drainage for the disposition of sewage no matter what system is used.

Camps should be carefully laid out so that there is no chance that the sewage may contaminate the water supply and the bathing beaches. They should not be built too much in the shade so that the sunlight will not have a chance to thoroughly dry the ground after rains or in foggy, damp weather.

After the camp is selected, the type of housing selected, it should be built as simple as possible so that it can be kept clean easily, with proper light and ventilation and properly screened. The kitchen and dining rooms should be as far as possible for convenience sake from the toilets.

In Maine the health problems of the summer camp are those of the ordinary home, many times increased as many of these camps have between 50 and 150 campers. Camps need every safeguard that every home should have, and as the camp owner or director is in charge, he is loco parentis and is directly responsible. The campers must share with each other all the sanitary arrangements of the camp and should be considerate of each other.

As one would not, from choice, select a low, marshy spot or a place surrounded by wet, moist ground for his home so such sites should not be selected for camps, especially when they are to accommodate a large number of people. Wet, marshy places are breeding places for mosquitoes. Water soaked soil is not favorable for camps as it does not permit of proper drainage as the water level is very near the surface. For this reason of

drainage, clay soil is to be avoided as far as possible.

When it is considered that the summer camp is built for the purpose of keeping the campers out-of-doors, weather permitting, the camp and all surrounding should be dry and well drained.

As this fact is well recognized the construction of camps should be given careful consideration for ventilation at all times, day and night, and in all kinds of weather. Proper protection for the sleeper from winds and rain at the same time giving good ventilation. When camps were first instituted tents were the usual housing used, but more and more huts or buildings of the bungalow style are being used. There are several styles used, most of which are very satisfactory. The most satisfactory are those which accommodate only a small number, not over four or five campers with a councillor. The larger building for sleeping quarters are to be condemned, especially as to the dangers of spreading communicable disease. If only a small number are exposed the control is much easier. This has been demonstrated time and time again and in many cases the disease has been kept confined to the inmates of one house.

The kitchen is the most important room in the camp from the point of view of health. No one will contradict the statement that the places where foods are prepared and stored should be the most sanitary places in the camp. In the modern hotel today every known device for cleanliness in the kitchen is installed, and as the camp is in reality a hotel given to the taking care of children, only the same care and supervision should be given to the kitchen as in a hotel and should be so situated that they have plenty of sunlight. There should be plenty of room so that cluttering can be avoided.

Care should be taken in the selection of the kitchen help. Often the kitchen employee is mentally and instinctively lacking in appreciation of the niceties necessary in the handling of foods and often herself a carrier of disease.

Our state regulations require that all food handlers should be examined to show that they are free from communicable diseases, either in an active stage or as carriers. All cooks should be carefully questioned as to what diseases they have had, especially typhoid fever.

Dirty sink, food trays, dishes, benches and floors attract insects, especially flies which may

come from neighboring stables, from garbage containers, privies and toilets.

The ice box should be kept at a temperature of 50°. Many people wrap ice in some material to prevent it melting, ignoring the fact that the cooling of the refrigerator depends on the melting of the ice. This saves ice, but does not refrigerate properly, and causes people to wonder why milk soured while in the ice box. Many foods absorb odors, milk and butter being especially susceptible.

The dining room should be light, well ventilated and thoroughly screened in the preparation for the meals, and if food is put on the tables before campers arrive, it should not be allowed that flies may wander over the food at this time. Food should not be exposed to insects any more here than in the kitchen.

Our regulations require that liquids stored for drinking purposes shall not come in contact with ice in such containers, and water coolers must contain two compartments, one for the ice and the other for drinking water. The common drinking cup is not allowed in this State. Even if none of the people have typhoid, Riggs disease, venereal disease, diphtheria or other diseases, common colds are too easily spread to allow the use of the common drinking cup.

Garbage disposal, refuse disposal is demanded by the generally accepted standards of cleanliness and convenience. The accumulation of waste, food stuff, materials commonly called garbage may allow for the development of flies, though garbage is hardly left long enough for that, yet the danger is that the odors of garbage attract flies from still more undesirable localities. Garbage cans should, therefore, be odor tight, as well as fly tight and should be water tight for otherwise leakage from the can will cause accumulations of foul smelling substances in the soil about it.

We recommend that the garbage cans should be kept in screened places on cement foundations which can be easily taken care of. Cans for the reception of food refuse during the preparation of the meal must be emptied after each meal. All garbage cans must be thoroughly cleansed after emptying and should be carefully sunned.

The final disposal of refuse and garbage is an important problem. Tin cans and such refuse should be cleansed so that no food is left in them, or burned out in an incinerator, then hauled away

and buried. Garbage is usually taken away by a farmer to be fed to his pigs, but in some places this cannot be done. Under these conditions it should be burned.

Any method of sewage treatment of excreta disposal if it is to be effective in the reduction or elimination of disease must prevent:

- (a) The access of flies to the excreta.
- (b) The access of animals to the excreta.
- (c) The scattering of the excreta or sewage over the surface of the ground, causing soil pollution.
- (d) Ground water pollution, or the contamination of wells, springs and other sources of drinking water.

There are, of course, other points which must be considered before the workability or practical application of any type of privy or method of excreta disposal can be determined, but the sanitary and health protective values will depend almost entirely upon compliance with the mentioned conditions.

It is not necessary to go into the detail of the first requirement, as it is a well known fact that flies are carriers of various diseases and all filth should be protected against the fly so that he will not be scattering filth about. The persons who are actually sick are probably not the only ones infected as others escape through natural resistance or immunity or for other reasons.

The important thing is to select the proper or best methods of sewage disposal which the situation of the camp and the character of the soil demands.

The camp owner has choice of the pit, box, can, concrete vault, chemical and septic privies where running water is not available, and where flush toilets are used, the septic tank is the best means for disposal. These for convenience can be divided into two groups, those in which water is not utilized as a flushing or carrying agent and second those included in the water carrying system.

The first class as a whole are not entirely satisfactory, yet have their advantages under certain conditions.

The pit or vault privies should be made inaccessible to rats and vermin. Deep, tightly built vaults keep out rats and other animals, but are hard to clean. The pit privy is preferably used in some instances because the house can be moved to

new positions and the pits covered with less nuisance than attends cleaning the permanent vaults. The privy house itself should be fly proof.

The dry earth privy. In this method of sewage disposal dry earth or other substances are used to cover the excreta. And because of the use of the earth, ashes or other substances, the amount increases more rapidly and necessitates cleaning more often.

The box and can or pail system has little to recommend it when other systems are available. The pail, can or box, should be cleaned often and in some cases daily. It is often difficult to get a scavenger to do this, and it means that the excreta is to be disposed of by some method. Various methods are used for this disposal. It may be buried, incinerated or tank treatment used. The choice of this final disposal will depend on the amount of material to be disposed of, the type of soil and other considerations. Burial is perhaps the method most frequently used where sewers are not available for disposal. The most common disposition by burial is in pits or trenches. These may be of various sizes and of various depths, but generally they should not be over three or four feet deep. It usually requires from two to four years, possibly longer for the pit contents to digest completely. There should always be two sets of cans or pails. The pits or trenches should have a cover of at least twelve inches of soil.

The main advantages of burial in pits or trenches are less attraction to flies, less nuisance, better covering and the reduction in the chances for surface wash or mechanical pollution.

In pits used for the whole year in our climate the question of freezing must be taken into consideration, but as camps are only used about two months in the year, we do not have to consider this.

The person upon whom the task of emptying the cans or pails falls is usually more concerned in doing it the quickest way than in doing it the right way so have to be kept constantly under supervision.

The septic type of closet depends for its action upon the same principal as the septic tank, that is, the retention of the excreta, and its storage under such conditions as to allow a process of sedimentation and septic action. Water is added to aid in the bacterial action. The overflow from the tank

must be treated further to prevent it from spreading disease.

This type of privy was developed by Drs. Lumsden, Roberts, and Stiles of the U. S. P. H. S. and at once sprang into much favor. It was most unfortunately advertised widely as a type requiring no care. It must be given regular attention or it is very objectionable, especially in the northern states when the freezing cold weather has to be considered for all the year use, and is especially objectionable when large numbers are using it as in the summer camps. Sufficient size is an absolute necessity and the initial cost is quite high.

We have been considering the disposal of excreta by means of the various kinds of privy, but the privy is no longer adequate when running water has been installed in the house, and bath, toilet, kitchen sink and other connections are contributing to the wastes from the household. These wastes consist of a mixture of a large amount of water and a small amount of fecal and other organic matter. This relative small amount of organic and fecal matter is sufficient, however, to render entire mixture objectionable and subject to putrefaction. The sewage may also contain disease germs. Some treatment must be given to prevent nuisance and the spread of disease.

The most generally used process of primary treatment or clarification is tank treatment. The sewage is passed through a tank or chamber which slows up the velocity of flow sufficiently to cause the coarser suspended matter to settle to the bottom or rise to the top. The partially treated sewage, now called the effluent, passes on out of the tank to undergo further or secondary treatment if it is deemed necessary. Septic tanks of various construction are most commonly used in the treatment of sewage. Imhoff tanks or plain settling tanks may also be used. The septic tanks treats sewage by sedimentation and septic action.

The size of the septic tank depends upon the amount of water to be used. If shower baths in addition to the regular sewage are to be used the capacity has to be increased and must also depend on the character of the soil and lay of the land where the final disposal is made.

The cesspool which is a basin or pit in the earth for the reception of effluent from a water system

of sewage disposal are of the two kinds, the leaching and tight. The subsoil in the vicinity becomes heavily polluted, the distance of travel of such pollution depending on the type of soil and the depth of the ground water. The depth is usually great enough to place dangerous contamination within reach of ground water, thus increasing the danger. For this reason cesspools are not considered very favorably.

The various methods of secondary treatment include subsurface irrigation, sand filters, trickling filters, leaching wells, etc.

The most common is subsurface irrigation which consists of discharging the effluent from the tank into the earth beneath the surface of the ground. This is usually accomplished by means of a line of open joint tile laid in one or more rows 12 to 20 inches under the ground surface. The effluent from the septic tank overflows into the pipe line through the open joints into the ground. This method may be used in any place where the ground is porous enough to absorb the liquid and where there are no conditions tending to cause pollution of ground water. It works best, of course, in a sandy or gravelly soil, and may be used with proper precautions, in tight soils. The tighter the soil, the greater the amount of tile needed and the more care required in construction.

The kitchen sewage should not go into the same tanks or cesspools in which the toilets empty, as the excessive amounts of water that are there used will have a tendency to overload the ultimate disposal of the tanks or pools. To prevent clogging of the pipes used for kitchen sewage the grease trap is used and so situated that it is of easy access for cleaning purposes.

The sleeping quarters should be located on high, dry ground, well drained and well exposed to sunlight. If tents are used, they should have individual mosquito netting to protect against the mosquito and the recreation halls should also be protected. Mosquito bites may become infected and cause not only discomfort, but become a danger to life even.

The communicable disease problem is a very important one to consider when boys and girls from 6 to 18 years of age are gathered together from all parts of the United States and even from other countries, as there have been campers

from the West Indies, Mexico, China, Japan and Canada. In most of the camps, if not all, a physician's certificate of good health is necessary. This, of course, lessens the chance of communicable disease, yet in spite of this we have some cases brought to us, as occurred last year in one camp. One girl being taken sick en route with what proved to be measles, but before it was diagnosed several had been exposed. Prompt reports by the camp owners and prompt action of the health department kept the disease to a minimum with proper quarantine.

Two years ago scarlet fever developed in the State Y. M. C. A. Camp. In this camp the buildings accommodate forty to fifty boys, so that special quarantine had to be made for all the boys in the building in which the case appeared. Because of the large number there were several cases in that building, yet no cases developed in the other buildings. If the building had accommodated only four or five probably the cases would have been greatly diminished.

It is very important that a separate building be maintained for an infirmary where all sick can be looked after and if a case of communicable disease develops it can be properly isolated.

With the advent of the automobile another problem has entered the field of public health. Touring by automobile has become firmly established in this country. Many people have been able to take vacations and view the country as never before. Our roads are full of people who carry their own camping outfits or are looking for established camp sites. Within two or three years many camping places have been offered to the public with, and in many cases, without proper sanitary arrangements.

Many people camp wherever they may happen to take a fancy, by the banks of streams, rivers, lakes and ponds, and by the roadside, leaving the camp site cluttered and a blot on the surface of the earth. Remnants of food scattered about and their excretions not properly taken care of is a proper breeding place for flies and a menace to the community.

In 1922 the Maine State Department of Health started to make analyses of water supplies of all summer camps offering this service to camp owners free of charge and urging them to take advantage of the offer.

In 1924, regulations were passed requiring all public eating and drinking places to have their water supply analyzed by the State Department of Health at least once every year. Public eating places were defined in these regulations and included all recreational camps, lodging places, camping grounds, etc. The regulations also included screened dining rooms, proper garbage disposal, and sewage disposal equipment. All food handlers were required to secure a physicians certificate that they were free from any communicable disease. These rules and regulations were particularly well received by owners of camps and greatly improved the general character of the camps.

Last winter the legislature passed a law requiring that all recreational camps, roadside eating and lodging places, overnight camps, etc., must secure a license from the State Department of Health and in order to secure this license they must comply with all the rules and regulations pertaining to public eating places. This requires an inspection of every camp and it is hoped that the sanitary conditions of these places will soon be the best that may be secured.

No summer outing is more profitable to the city child than that of the well conducted summer camp. Six or ten weeks of camp routine, with its schedule of work and play, is apt to make any child more robust, more self-reliant and resourceful, better able to co-operate with others and a keener lover of outdoor life and nature.

But, with such quantities of camps to choose from—mountain, lake, forest and grove—how are parents to know which is most desirable?

Since the first aim of the summer camp is to produce healthy youngsters, the wise parent will look into the provisions that are made for insuring good health. In the first place, it is well to make a study of the camp site. More than natural beauty of landscape and bracing air are needed to make the summer camp a safe place for children. Very important is it that the camp have a safe water supply and a sanitary method of waste disposal.

Care should be taken that the camp does not receive its water from polluted streams or unsafe wells. Those in charge of a summer camp have

failed in their duty if they have not had an analysis made of the water supply. In most camps, not too remote from civilization, standard sanitary equipment can, and should, be secured, and installed. This should at all times be kept in good working order, or it may constitute a serious menace to health.

When parents have satisfied themselves that the camp has made ample provision for its sanitation, they should concern themselves with possibilities for contagion. When so many children from various communities and states are gathered into one camp, there always is danger of the outbreak of communicable disease. Among a group of children there are almost certain to be carriers and often actual beginning cases of disease. The well conducted camp will provide for the examinations of the children before they encamp and for periodic examinations of each child during the period of their attendance.

If a child should fall ill, there should be provision in the camp for his prompt isolation, and someone with sufficient knowledge of control measures should take the situation in hand.

The better camps will require that before the child is admitted, he must be vaccinated against small pox and immunized against typhoid fever. It would be well if the child is also protected against diphtheria.

Most camp leaders make wise requirements as to the amount of warm clothing and bedding that the children must provide. Too, they are restricted from taking an excess of such commodities.

These, then, are some of the precautions that parents should take in enrolling their child in a summer camp. What the camp offers in the way of special recreation and education is a matter for personal preference. A good thing to do, however, before the child is entered in any camp is to have a complete physical examination made of him. He might have a weak heart that would not stand strenuous swimming, long hikes, canoe races or other athletic events of the summer camp.

In summary, the sanitation of camps resolves itself into practically three factors.

- (1) Proper location.
- (2) Safe and adequate water supplies.
- (3) Safe and efficient disposal of wastes.

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EDITORIALS

"THE COUNTRY DOCTOR"

The diminution in number of country doctors is believed by a part of the public to be due to an increased standard of medical education which, in turn, has reduced the number of medical schools and students. Apparent strength is added to such a belief because the need of rural physicians was felt about the time a few medical colleges were closing.

The theory does not explain why the sons of so many farmers are leaving the country. What

would a medical college with standards lower than is now acceptable do to return these young men to the country if they are determined to leave it without a college education?

The problem involves more than an increase in medical schools or students. The responsibility for it does not rest with the medical profession. When the cause for the general desire to leave the country districts is found, we may know why physicians do not locate there.

Meanwhile the criticism of selfishness on the part of the physician may be avoided by giving the public truer information about the matter.

GET THE AUTOPSY

Much has been written recently about the value of post-mortem examinations and in many places honest efforts, made to improve the work of hospitals in obtaining such examinations in their fatal cases, have begun to bear fruit. This is best exemplified in the larger teaching hospitals and it may be said that the percentage of autopsies obtained bears a direct relation to the grade of work that is being carried on in any given hospital. Where the spirit of scientific investigation prevails there will be found doctors who regard a study of the necropsy findings in their patients who die, as an indispensable means of learning medicine and of improving the advice, aid and protection that they can give to their living patients. These statements apply especially to the larger general hospitals and will be freely admitted. In addition to these, the *Journal* would emphasize the following: As James McKenzie has pointed out, in the private practice of the well trained general practitioner lies a fertile field for clinical investigation. Let us add that by the means of necropsies performed on the bodies of those who die as his *private patients* the general practitioner will increase his own knowledge of disease and will enhance the value of his clinical researches. If he can but overcome the ill-founded fear lest he give offense by requesting the permission for a post-mortem investigation and thus lose cast in the eyes of his patient's family, he will realize that on the contrary his thorough and upright desire to know underlying pathology and to trace out cause and effect will enhance his prestige. He should be able to point to the post-mortem as a last possible contribution on the part of the departed to the welfare of humanity, and can disarm criticism by the statement that were the death in his own family he would see to it that a necropsy was performed. The man who cannot make this declaration honestly has no right to be practicing medicine.

UNUSUAL SYMBOLISM IN A CASE OF
PSYCHONEUROSIS*

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I report this case because it contains some interesting features of the superposition of at least

three standard psychoses, and also because it shows the subconscious employment of symbolism unusual both as to its mechanical course and to its contents. There may be found in it food for speculation on how the family physician could redeem and prevent at an early stage pathogenic environmental situations which, accumulating themselves throughout the years and becoming exacerbated through the critical period of menopause, may be averted if only the general practitioner would understand the earliest symptoms of a latent psychosis and if he were willing to utilize his prestige in the family as an arbitrator of ethical relations.

Mrs. G. E., aged 52, of English, Scotch and Irish descent, with a good family history, Protestant, mother of eight living children, was always known as a sensitive, dutiful person. It is said she was not a good mixer with playmates, preferring books to games. (Later analysis brought out, however, that her parents had inculcated upon her mind a sort of seclusiveness as regards association with playmates or adults, which education she always silently resented.) About ten years ago she had otitis media, during which she was subject to transitory crying spells. She was sleepless at that time and worried about this fact. During the birth of some of her children she cried in an uncontrolled manner, and after their birth seemed excited. Her married life was apparently happy with a husband who courted her for six years. (The husband is even now convinced that she was perfectly contented until recently.) In thirty years of married life nine children were born, one of which died. Some of the children are very intelligent and graduated from college with honors. One year and a half ago, when the patient was 50½ yrs. old, she started to worry about dreads, that she may contract some horrible disease, or some relative may die, or else some other terrible thing may happen to her and her family. She experienced palpitation of the heart, morbid fear of death and insanity, and complained of inability to eat because of gas in her stomach. She also worried about having acted like an animal at times. She lost thirty pounds, became depressed and sought relief first at the Newport Hospital, but

*Presented in the Psychotherapy Clinic at the State Hospital for Mental Diseases, Howard, R. I., December 15, 1927.

later in the Butler Hospital, voluntarily. After a few weeks she left unimproved, against medical advice. She accused herself of the vilest things, which she never committed, telling her husband that she had sex intercourse with other men before her marriage. She told him this fictitious story merely for the sake of distressing him. She evidenced crying and clutching spells, for which she was incapable of giving any account. It was believed that she did not recall some of these spells as she could not account for their cause. During her stay at the Butler Hospital she had fits of rage, broke glass and swallowed some with suicidal intentions. In spite of the fact that her husband took her out of the hospital upon her insistence, she staged a scene of violence against him at home, after which she was committed to the State Hospital for Mental Diseases, at Howard, R. I., on August 17, 1927. Here she became noisy, especially during the night, so that beside psychotherapy and detailed analytical study, calming hydriatic procedures were added to her daily routine. She went to bed every night at 6 o'clock, slept soundly until 3 A. M. and then complained of insomnia. (The correct appreciation of this state of affairs, which has contributed much to her worries, came only after analytical and reeducative psychotherapy.) Her menopause started insidiously three years ago, but became established after a stay of a few months in this hospital. Between spells of screaming, clutching and wringing her hands, also biting her arms, she seemed ladylike, well-composed and highly cultured.

In the staff clinic the opinion was divided between Psycho-neurosis and Involution Melancholia, although there were some paranoid traits, which could not be well placed in either class. Therefore, her case was declared one of undiagnosed psychosis.—Hyperactivity, impulsive acts, indecision, twitching of fingers, agitation and anxiety, morbid fears, sadness, an oscillation between psychalgia and sarcasm, certain mannerisms, intact intelligence, at times appropriate emotional response together with partial insight were then the outstanding features. Physical findings were neurologically essentially negative, excepting for a moderate vasomotor instability, exaggerated knee jerks and Achilles reflex.

I started mental observations and tentative treatment on her on October 5th. By a method of persuasive reeducation, showing the general

and personal values of life to her and the futility of suicide, provided that she believed in the buddhistic Nirvana, as she said she did,—she calmed down temporarily, proving to me that the vivid parables and mental images I applied have effected in her an ideational control over her emotions; but when I left her alone temporarily, her recently acquired rational defense mechanism did not prove strong enough to resist the irrational urge of psychotic self-expression.

There were fifteen long analytical sessions, during which considerable and multiple mental traumatism distributed throughout her whole life could be revealed. In the first twenty-five years of her life she experienced an accumulation of twenty-three intensive negatively-toned mental occurrences, whereas in the last ten critical years there occurred eleven intensively negative-toned part-traumas. Those occurring in early life were of sexual nature; shock because of a man chasing her, proposing indecent relations, exposing himself; curiosity about masturbation and remorse for having habitually practised it before marriage. An early disgusting experience with filth also fell in this period.

In the middle part of her life, beginning from the event of the love technic her husband displayed on the wedding trip until the time when the children were older, she worried for having coupled her life with an emotionally chilly and affectively unresponsive man. Later, when she became retrospective about this matter, she entered in a state of rage, as she felt similar to a helpless animal trapped cruelly in a cage. In order to "hold on to her nerves" she performed the mimic of biting, i. e. controlling her arm lest she hit someone, especially her husband. She also clutched her hands in an attitude of prayer, for the great self-oblivion and annihilation in the buddhistic Nirvana. Her screaming expressed despair, for she considered herself dead-locked. Too many children were also one of her worries. She was affectionate, and consequently had to bear children as she always was a strictly moral person. Condomated and interrupted coitus was resorted to with the usual damage done by the latter to her nervous system. During her intimate intercourse with her husband she saw non-sexual images, like beautiful forests, houses, and other landscape without any human being in perfect solitude floating in

the air. This can now be interpreted analytically as an attempt to escape from distressing reality. She failed to find an intrinsic interest in sacrificing for her children, as she was brought up by her parents in a manner unfavorable for normal sociability and community ideals. She also was told by her parents about the excessive danger of dirt and masturbation, which two items have had a considerable after-vibration throughout her following life.

When she was 23 yrs. old, in order to reduce a fractured arm, she was etherized. She dreamed that she lay on the bottom of the ocean as the most primitive being: a protoplasm. Then she ascended to an upper level of existence, becoming a shell. And after having passed through several forms of increasingly higher and higher avatars, she finally broke out from the ocean as her actual human self. Then she awoke and lapsed promptly into a second dream, during which she saw herself sinking suddenly to the bottom of the ocean, starting again the difficult climb through all forms of existence. Such series of evolution and involution of a most general cosmic and, so far as this earthly existence is concerned, ultrapersonal agent in her dreamworld appeared then the first time, in my opinion as a forecast of what I would term an immortality complex coupled with a deep craving for importance and social prominence. Nineteen years ago, after ingesting a teaspoonful of Bromine Solution she had an experience of depersonalization, consisting of the sudden perception of her body stretched out on the bed, while her real self seemed to have been floating in the air. This might be interpreted as a sign of genuine hysteria, shared by poor medieval victims burned as witches; or else, one may consider it as a symbolic expression of her craving for liberation.

During the past ten years her husband became gradually more frigid, although his dynamic potency did not suffer. She had to humiliate herself in her own eyes as she had to ask her husband for sexual satisfaction during the past eight years. He responded politely, but in a business-like, disinterested manner which shocked her self-respect. There were a number of other smaller mental traumas in the past ten years, but the above described one seems to have been the most outstanding.

Since in this hospital she has done considerable retrospective misinterpretative autistic specula-

tion. She has developed ideas of reference from hints she believed the nurses and other persons have made concerning her foolishness and her husband's infidelity. She evidenced a most interesting phase in the acute development of persecutory ideas centered upon the husband and of suspicions toward her environment. She has oscillated considerably in her attitude toward the psychotherapist, as one day she doubted that he was the person whom he pretended he was, while the next day she treated him as a friend and according to his duties. She had illusions concerning certain persons entering the wards and talking to her husband when these people were not those whom she believed they were. She actually never was afflicted with hallucinations, but indeed with delusions of variable content and with transitory illusions. One week ago, after having read some medieval history, she conceived the idea of having originated from the Plantagenet Royal House. To furnish reasons for this belief was not necessary according to her, because she "knew it" and that sufficed her. But upon urging her, she said that the ferns on the ward were allusions to the royal crest of the Plantagenets, and she showed that her family name resembled the name of a noble family of Germany which was connected hypothetically with the Plantagenet Royal House. Thus, the different families intermarrying in the past, she now infers by hypothesis that she must therefore be a member of the Plantagenet Dynasty. She also likens herself to the pillars of an arch; if they fall, the whole edifice collapses. If she were compromised in the eyes of the world and fell, it would bring about great consequences; many notable European families would also perish. Thus she continues her day wish-dreaming about symbolized social prominence and importance. The wish-phantasying now seems to be a pathological defence mechanism, but its first origin can be demonstrated in the fear of mortality of her person and cosmic importance, as shown in the ether dream above related, occurring longer than twenty years ago.

After having reached comparatively weak therapeutical results by mere deviating suggestions, I concluded that more intensive effects could be attained with a technique not fatiguing her attentive concentration, but only decreasing her natural resistance against accepting foreign mind contents, meanings, symbols.

For this purpose, after a two months' period of tonic and dietetic preparation, the attack on a special abnormal point, for example the autistic form of reasoning, was made from a varied angle, in a dramatic, vivid manner and thus the fractionated method of phycho-cathartic analysis with interpolated hypnoideal suggestions, interpretations and reeducation was employed, one of the sessions being purposely stretched out for four hours and another in the series for four hours and a half.

In the reeducational dialecto-therapy the most impressive idea to the patient was the discovery that she did and does not really crave for a Nirvana-like extinction of her own self-awareness, but for the extinction of mind-pain from her personality consciousness, which she indeed fundamentally wishes to maintain. The other strongly impressive and deeply inculcated therapeutical argument against suicide was the idea of her responsibility toward her children's reputation and also toward the avoidance of becoming a demoralizing example.

According to tentatively devised point scales of our metric tests performed on the patient before and after these protracted treatments, I may state that:

Her insight improved from 52 to 77%;

Her attitude toward reality improved from $1\frac{1}{2}$ to $13\frac{1}{2}$ %;

Her ego-circle reaction improved from 15 to 62%;

Her immediate response to reeducative and suggestive dialecto-therapy improved from 45 to 81%; and finally a 20% improvement was noticed by the psycho-technician, my assistant, in the patient's social interest and other group reactions to reeducational mental training classes the record showing a modification of 40% value to 60%.

In conclusion, for diagnosis, I would suggest Psychoneurosis, Hysteric type mainly according to the fashion of a Substitution Neurosis, Involution playing an additional rôle. The prognosis would depend upon social methods of stabilization, co-operativeness of near relatives, finally on periodic medical after-care.

Finally, I wish also to express my sentiments of appreciation towards Dr. Sartwell, Superintendent of the State Hospital, who has referred this most interesting case to my department, thus giving me opportunity to study it.

CLINICAL DISCUSSION

Drs. Coon, Johnson, Littner and Perkins agree with the diagnosis.

Dr. Sartwell: I agree and wish to add that this case is very instructive. When the patient was presented first, several months ago, she showed involutional symptoms, an organic psychosis of which the outlook seemed dubious. It was somewhat atypical and, consequently, a few members of our staff thought of a psychoneurotic element, although the involutional picture was the more prominent one. In the analysis it is now brought out that there is an ideational element which can be made to influence the emotional factor. An improvement has been brought about in this case of which there is evidence that it is not as grave as it was thought at first. I fully believe, had this patient been allowed to vegetate on our wards, she would have deteriorated in due time. But her improvement, I think, shows the value of painstaking analytical and suggestive work in such cases. We never know with certainty just when a mental patient can be helped. I believe the benefit she has gained depended largely upon the psychoanalysis or "mental overhauling," as the patient herself termed it most appropriately. In my present opinion the outlook is possibly favorable, and Mrs. E. ought to go home. According to the analytical data, it would seem advisable to give the husband a "mental overhauling" before the patient leaves the hospital.

Dr. Ujhely (concluding): The SUMMARY of the case contains five points of interest:

(1) Here is an instance of hysteroid substitution psychoneurosis with a reality consciousness, shifting to and from the normal border line, with partial insight and a pseudo-philosophic psychalgia.

(2) More than twenty years before the actual onset of the psychosis an accidental ether dream revealed symbols of craving for a cosmic expansion of the patient's personality, and a fear of its shrinking, which according to the writer seems indicative of an immortality complex. The connection between the remorse at having masturbated and the fear of a relapse into the animal state, also the performance of animal-like violent acts during her later psychosis, is noteworthy.

(3) The psychosis broke out actually after the menopause began to establish itself; before its ac-

tual establishment hysteroid motor symptoms, essentially symbolic mimic gestures, were prominent; after its actual establishment, however, paranoid ideas of reference came into the foreground.

(4) Also compensatory day-dreams relative to the expansion of her personality and its cosmic importance were observed recently.

(5) The fractionated protracted method of psycho-cathartic analysis, focussing at any one time the patient's attention upon different emotional zones of the affective sphere, the analysis being interrupted only by drawing the reeducative lesson and suggestively engraving it, proved more beneficial in this case than purely suggestive and hypnoideal methods alone.

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SOCIETIES

PROVIDENCE MEDICAL ASSOCIATION (Providence District Society)

The Annual Meeting of the Providence Medical Association was held at the Medical Library, 106 Francis Street, Monday evening, January 2, 1928, at 8:45 o'clock.

Program

1. Reading of the records of the previous meeting.
2. Report of the Secretary.
3. Report of the Treasurer.
4. Report of the Standing Committee.
5. Report of the Reading-Room Committee.
6. President's Annual Address.

7. Election of Officers and Committees for the ensuing year as follows:

President—Edward S. Brackett, M.D.; Vice-President—Arthur H. Ruggles, M.D.; Secretary—Peter Pineo Chase, M.D.; Treasurer—Charles F. Deacon, M.D.

Member of the Standing Committee for five years: Henry J. Hoye, M.D.

Trustee of the Rhode Island Medical Library for one year: N. Darrell Harvey, M.D.

Reading Room Committee: George S. Mathews, M.D., Elihu Wing, M.D., Guy W. Wells, M.D.

Delegates to the House of Delegates of the Rhode Island Medical Society: E. S. Cameron, M.D.; W. H. Higgins, M.D.; A. J. McLoughlin, M.D.; P. P. Chase, M.D.; F. E. McElroy, M.D.; A. Corvese, M.D.; M. Adelman, M.D.; P. C. Cook, M.D.; C. W. Skelton, M.D.; R. S. Wilcox, M.D.; J. W. Sweeney, M.D.; P. Appleton, M.D.; W. Pickles, M.D.; A. A. Barrows, M.D.; G. H. Crooker, M.D.; C. H. Jameson, M.D.; W. S. Streker, M.D.

8. Appointment of Committees by the President.

9. Communications.

10. Reports of Committees.

11. Unfinished and new business.

12. Reading and discussion of papers.

13. Reports of cases.

14. Presentation of specimens.

The Standing Committee approved the applications of the following for membership:—

Clarence H. Woodmansee, Frederick A. Hasney, Joseph C. Johnston, Joseph Franklin, Herman A. Lawson, Julius G. Kelley, Kathleen M. Barr, all of which were duly elected.

Collation followed.

PETER PINEO CHASE, M.D., *Sec.*

KENT COUNTY MEDICAL SOCIETY (INCORPORATED)

The annual meeting of the Kent County Medical Society was held on Thursday evening, December 15, 1927, at the Elmcroft, Hills Grove, R. I.

The following officers were elected for 1928: President, J. F. Archambault, M.D.; Vice-President, Geo. B. Farrell, M. D.; Secretary, G. Senerchia, M.D.; Censor for 3 years, Gilbert Houston,

M.D.; Censor for 2 years, Ben. F. Teft, M.D.; Delegate, Charles L. Phillips, M.D.; Councillor, Charles S. Christie, M.D.

Dr. Hudson read the annual President's address on Mitral Stenosis. The paper was very interesting as well as instructive, and Dr. Hudson was extended a vote of thanks.

Meeting adjourned and annual banquet was served.

G. SENERCHIA, M.D.
Secretary

HOSPITALS

MEMORIAL HOSPITAL

The following is a copy of the minutes of the Memorial Hospital Staff meeting held January 5th:

"Meeting called to order at 9 P. M. by President Wheaton. A very interesting and instructive address was given by Professor Charles Stuart of Brown University, subject being 'The Nature of Anaphylaxis.' This lecture was discussed by all the members of the Staff present. Routine business was transacted at the end of the lecture. Meeting adjourned at 11 P. M. Collation served."

JOHN F. KENNEY, M.D.
Secretary

ANNOUNCEMENT

State recognition of the high rank of Saint Luke's International Hospital School for Nurses, Tsukiji, Tokyo, was officially confirmed by the Imperial Japanese Department of Education by the publication under date of November 24, 1927, of an official decree conferring college (senmon gakko) rank on the institution, the course of study being for three years, and one year extra for taking special higher training.

The School is the first institution for nurses in Japan to be thus recognized, no girls being admitted without a diploma from a girls' high school. Saint Luke's International Hospital is under the management of the American Episcopal Mission, its head being Dr. R. B. Teusler, surgeon to the American Embassy.

BOOK REVIEW

PHYSICAL DIAGNOSIS (Ninth Edition) by *Richard C. Cabot, M.D., Prof. of Medicine at Harvard University*. Published by William Wood and Co., New York. 536 pages.

The present volume, ninth edition, is the same as that of the 8th edition except for the following additions:

- (1) In the chapter dealing with the heart sounds there are reference numbers corresponding to the Gamble-Cabot Cardiac Diagnosis Records which are to be marketed by the Columbia Phonograph Company of New York. These records illustrate normal heart sounds, accented and split heart sounds, presystolic, mid-diastolic and auricular fibrillation.
- (2) "Soliders heat" is given some emphasis.
- (3) In the section of blood there is a description of the Levy counting chamber instead that of Thoma-Zeiss.

The book still stands as a standard work in physical diagnosis for medical students and general practitioners in spite of the fact that because of its numerous technical terms it is not as interesting in reading as in some books which go into more details in explaining physical findings.

MISCELLANEOUS

ARTHRITIS

It is urged by Robert McE. Schauffler, Kansas City, Mo. (*Journal A. M. A.*, Nov. 19, 1927), that every physician use some simple clinical classification for arthritis and attempt to place his cases in one of these groups and direct his attention to the major characteristics of the group in his study and treatment of the individual case. It is necessary to distinguish between those cases in which the discovery and treatment of a local focus are all important and the other groups in which they are of little value. Every case of infectious arthritis imposes a peculiar obligation on the physician in charge. He must not be satisfied even if the symptoms subside, but must search earnestly for the focus of infection and attend diligently to the

general health of the patient. In the first year it is almost always possible to effect a cure; after five years, perhaps nobody can do so. In subacute and chronic cases it is undesirable to allow patients too much rest. If one keeps them down too long or knocks them down by too strenuous treatment, they may never resume any useful activity. No case of chronic arthritis should be accepted for medical, surgical or mechanical treatment, until the history has been carefully considered and a thorough physical and laboratory examination has been made.

ORGANIC TUBERCULOSIS IN MAN ANALYZED FROM POSTMORTEM AND EXPERIMENTAL DATA

Gross and microscopic studies of 106 autopsies of men who died of tuberculosis were made by H. J. Corper, Denver (*Journal A. M. A.*, Nov. 19, 1927), to analyze organic tuberculosis in man more accurately than was possible by utilizing the data in the literature alone. The average age of all the patients was 32 years, with a minimum age of 17 years and a maximum of 55 years. So far as could be determined, the age proved of no particular interest, within the range studied, with regard to a difference in organic reaction to tuberculosis. In order to make the examinations of these organs quantitative, each section was measured and its area computed, the number of tubercles counted in the entire area, and their size recorded by measuring the diameter twice, at an angle of 90 degrees to each other. The average of the two measurements of the diameter of the tubercle was recorded, because in estimating size either as area or as volume these figures would prove satisfactory for comparison, since the area of a circle or volume of a sphere may be taken as a function of the radius or diameter. The various clinical and postmortem features of the 106 cases were classified according to the four groupings +, ⊕, + ? and 0 in order to note any possible bearing of these on the organic reaction. Of the twenty-five + or suitable cases, twenty-two were recorded as being cases of chronic active pulmonary with pulmonary cavities; two as pulmonary miliary, and one as pulmonary inactive; of the twenty-three ⊕ or + ? unsuitable but positive cases, all were chronic active pulmonary

cases with pulmonary cavities, and of the fifty-eight negative cases without evidence of microscopic tuberculous lesions in the spleen, liver and kidneys, fifty-four were chronic active pulmonary cases, fifty-three with pulmonary cavities, and four were pulmonary inactive cases. Of the twenty-five + cases, four showed a spontaneous pneumothorax, and four empyema; of the twenty-three unsuitable cases, five showed a spontaneous pneumothorax, and three an empyema; while of the fifty-eight negative cases fourteen had a spontaneous pneumothorax and six an empyema. Tuberculous meningitis occurred in four of the twenty-five + cases, in one of the twenty-three unsuitable, and in four of the fifty-eight negative cases. Ulcerative laryngitis was found in nine of the + cases, in five of the unsuitable cases and in five of the negative cases. Tuberculous peritonitis occurred in none of the + cases, in one of the unsuitable cases and in six of the negative cases. Tuberculous mesenteric glands were present in two of the + cases, in none of the positive unsuitable cases, and in four of the negative cases. Surgical tuberculosis, including bone and joint disease, was present in six of the positive cases, in two of the positive unsuitable cases, and in one of the negative cases. From these figures it would appear that pulmonary cavities, spontaneous pneumothorax, empyema, peritonitis, and mesenteric glands do not exert a decisive influence on the development of a miliary tuberculosis in the spleen, liver or kidney. Ulcerative laryngitis and surgical tuberculosis were more prevalent in cases of miliary involvement of the spleen and liver. Amyloidosis appeared to be more prevalent in the spleen, liver and kidneys of the negative cases. Adult man displays a decided resistance to spontaneous human tuberculosis and thus resembles the rabbit and dog, as compared to the susceptible guinea-pig and monkey. Contrary to general conception, the child also appears to display a decided resistance to spontaneous infection. In addition to the favorable location of the lungs for the aerogenic route of infection, it appears that this organ has the added disadvantage, so far as the welfare of man is concerned, in being especially favorably situated (from the standpoint of available oxygen) for the development of the bacilli, thus contributing to the predominance of pulmonary organic tuberculosis in man. A quantita-

tive analysis of the splenic and hepatic organic reaction, as well as of the kidney reaction, in adult man in the light of the knowledge gained through the study of the organic reaction in experimental animals indicates that the human liver is about as resistant to tuberculosis as that of the human spleen, and that the greater average number and size of tubercles in the latter organ after hematogenous dissemination is due to the difference in the factors of deposition and oxygen tension of the source of oxygen in these organs. The lower frequency of miliary kidney involvement in man after hematogenous dissemination may be accounted for by the lesser deposition of bacilli from the blood stream. In organic cellular reaction the human spleen, liver and kidney more nearly resemble that of the rabbit than any of the other animals studied. Pulmonary cavities, spontaneous pneumothorax, empyema, peritonitis and tuberculous mesenteric glands did not exert and influence on the development of miliary tubercles in the spleen, liver or kidney. Ulcerative laryngitis and surgical types of tuberculosis were more prevalent in cases of miliary tuberculosis of the spleen and liver, while the reverse was true of amyloidosis of the spleen, liver and kidneys. Ulcerative tuberculous enteritis does not play a decisive role in determining miliary hepatic involvement in adult cases. The organic reaction to tuberculosis of the spleen, liver, kidney and probably the lung in the infant does not appear to differ appreciably from that of adult man.

POSTURE STUDIES IN GYNECOLOGY

In making posture studies in gynecology, Norman F. Miller, Iowa City (*Journal A. M. A.*, Nov. 19, 1927), uses the silhouettograph. An 8-foot tunnel constructed of black muslin cloth covering a wooden framework is used; the screen, of oiled linen, is fastened to a separate frame in the front and is thus detachable, while a door permits access to the tunnel. The entire apparatus rolls on castors, and can readily be taken apart should the occasion arise. This tunnel arrangement for taking silhouettographs does away with undue exposure, one of the undesirable features of posture study. In addition to the silhouettograph, actual measurements are taken, including the breadth of the shoulders; the depth and circumference of the chest just below the breasts in the normal and in

the expanded condition; the abdominal circumference, measured at the umbilicus, and again 2 inches below; the circumference of the hips, and finally the depth of the lumbar curve, the costal angle, and the angle of pelvic inclination. The measurements and the history especially pertaining to the patient's symptoms are recorded on cards used for this purpose and filed with the patient's silhouettograph for further study. In a study of seventy-two young women without dysmenorrhea, twenty-seven, or 37.5 per cent, were considered to have good body poise; twenty-six, or 36.1 per cent, fair, and nineteen, or 26.3 per cent, poor body poise, while a study of sixty-nine girls with dysmenorrhea showed sixteen, or 23.1 per cent, with good; twenty-one, or 30.4 per cent, with fair and thirty-two, or 46.3 per cent, with poor body poise. As dysmenorrhea is one of the common and most troublesome symptoms, it was taken as the criterion for grouping these individuals. A further study of the group having dysmenorrhea showed that in fifty-eight, or 84 per cent, the pain began before the onset of the flow. This period varied from several days to a few hours, and most often lasted one day or less. In only ten, or 14.5 per cent, did the pain start with the onset of the flow, and in one, or 1.4 per cent, the pain started after the onset of the flow. An additional observation of interest was that 76.8 per cent of this group were relieved of their pain within three hours after the onset of the flow; in 91.3 per cent relief was noted in six hours or less; while in 94.1 per cent the relief was noted within twelve hours or less. It was also noted that the average duration of the periods in this group was 5.5 days, and further that seventeen, or 24.6 per cent, flowed for more than six days. If a flow of six days or less is considered as normal, then an average of 5.5 days is obviously high, and the seventeen, or 24.6 per cent, flowing more than six days may be considered as having distinctly abnormal periods. In the same group of girls with dysmenorrhea, it was found that twenty-five, or 36.2 per cent, had some leukorrhea. Pain in one or both sides at the time of the menstrual periods was noted in twenty-nine, or 42 per cent. Backache occurred in thirty-two, or 46.3 per cent. This was a constant symptom and was made considerably worse at the time of menstruation in thirty, or 93.7 per cent; and in twenty-three, or 71.8 per cent, it was accentuated when the individual was

tired. Of forty-six nurses, twenty-three with and twenty-three without dysmenorrhea studied, among those with dysmenorrhea there were five, or 21.7 per cent, with fairly good poise, and eighteen, or 78.2 per cent, with poor body poise. In the other group of twenty-three without dysmenorrhea, there were seventeen, or 73.9 per cent, with good and only six, or 26.0 per cent, with poor body poise. Comparison of the data shows a slightly larger average for the chest measurements and costal angle in the group without dysmenorrhea, and a smaller average (2 inches) for the abdominal measurements. Data regarding symptoms show a greater difference; thus, 52.1 per cent of those with dysmenorrhea flowed for six days or more, while in the other group only 8.6 per cent flowed longer than normal. The relationship between faulty body mechanics and pelvic symptoms is further emphasized by comparison of the other symptoms of the two groups. Analysis of the symptoms and their relationship to poor body mechanics in this study of 187 young women has strongly suggested a definite circulatory basis, secondary to faulty posture or poor body mechanics. Treatment by general upbuilding and systematic exercise is indicated. The outlook, however, is not particularly bright, since routine exercises are tedious and laborious at best and are generally carried out in a half-hearted fashion. Continuous and persistent prodding by the physician is necessary, and even that is not always sufficient. To be of greatest value and to accomplish noticeable results, treatment should begin in childhood in the development and improvement of the body and must be carried on throughout life. It is a matter for education and prevention rather than exercise and cure.

STUDIES ON EFFECTS OF ABUNDANT CEREAL INTAKE

The feeding experiments reported by George R. Cowgill, Margaret H. Jones, Robert A. Frisch and G. P. Jackson, New Haven, Conn. (*Journal A. M. A.*, Nov. 19, 1927), show that, when suitable adequate supplementary foods are employed, the use of whole-grain cereals and likewise one of the milled wheat breakfast food products so as to furnish as much as 84 per cent of the calories of the diet is compatible with excellent growth, re-

production, lactation and general physiologic well being in the rat. A milled corn product such as hominy was only slightly, if at all, inferior to these products. The results of diets containing even as much as 93 per cent whole-grain calories approximated those of current "normal" standards. Apparently, therefore, it is almost impossible to set physiologic limits to the amounts of whole-grain cereals that may be included as a chief source of energy in an otherwise "balanced" diet for the rat. Success with the very large inclusion of cereals as sources of energy in the diet depends on the proper choice of the foods used to supplement the cereal. The observations of Osborne and Mendel concerning the remarkable value of certain combinations of liver and lettuce in promoting growth are confirmed. It is appreciated that caution must be exercised in applying the results obtained from rat experiments to the nutrition of man. However, consideration of the development of the science of nutrition hardly allows one to contend that results such as those reported in this paper do not have a practical bearing on human nutrition. In the opinion of the authors these results demonstrate conclusively that cereals may be used by man to a much greater extent than is common in this part of the world, and that nutritive success with high cereal rations is primarily a problem of providing suitable supplements. Furthermore, these supplements, contrary to what seems to be the current belief, need not include milk.

NECROPSY REPORTS ON PERSONS DYING SHORTLY AFTER EXTRAC- TION OF TEETH

The clinical-pathologic reports of three deaths, occurring within a short time after the removal of teeth, are presented by Richard C. Buckley, New Haven, Conn. (*Journal A. M. A.*, Nov. 19, 1927), to emphasize again the dangers associated with the extraction of teeth. The first two cases illustrate the serious complications of extraction of many teeth in a patient whose general condition is poor as a result of an existing chronic disease. The association of acute infections and severe clinical symptoms in diabetes is well known. The second case represents a widespread cell degeneration which undoubtedly started following the extraction of a large number of teeth.



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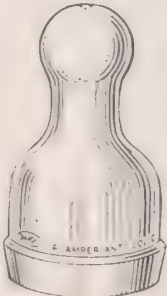
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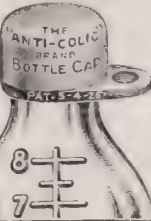


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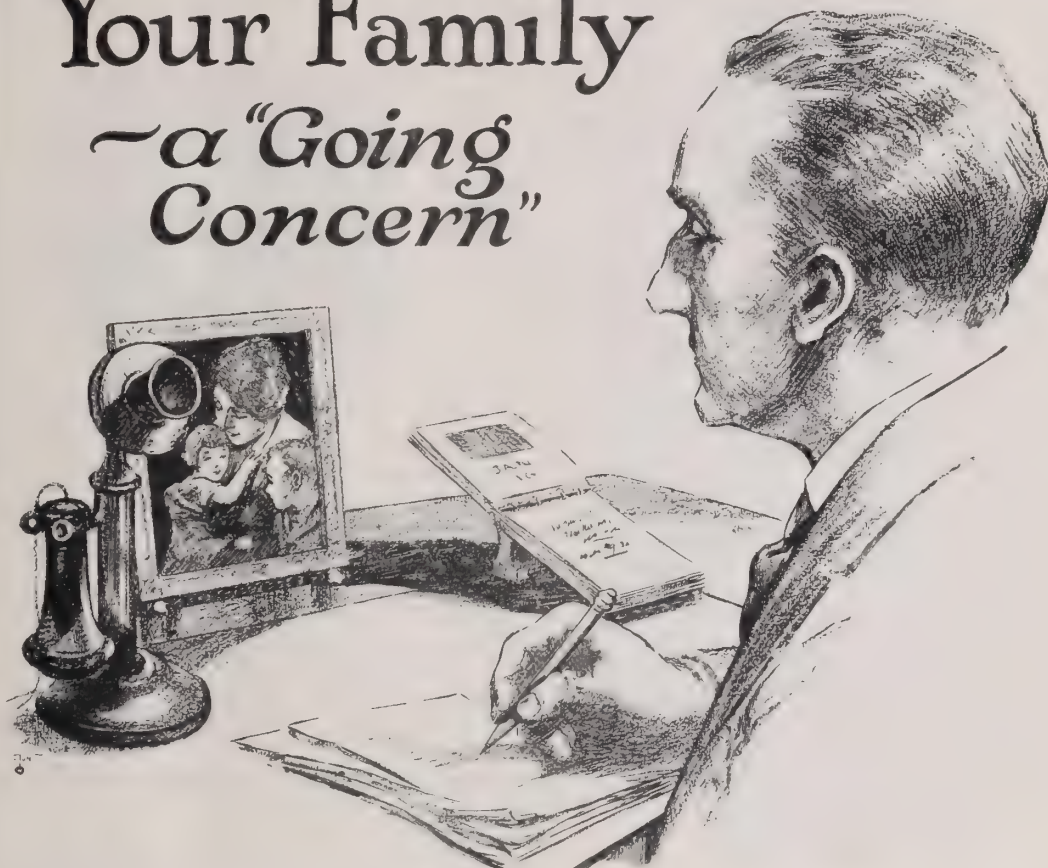
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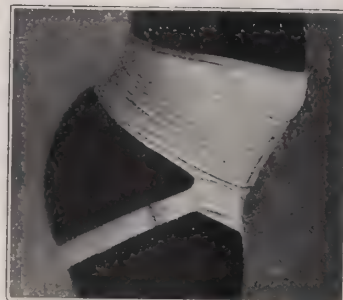
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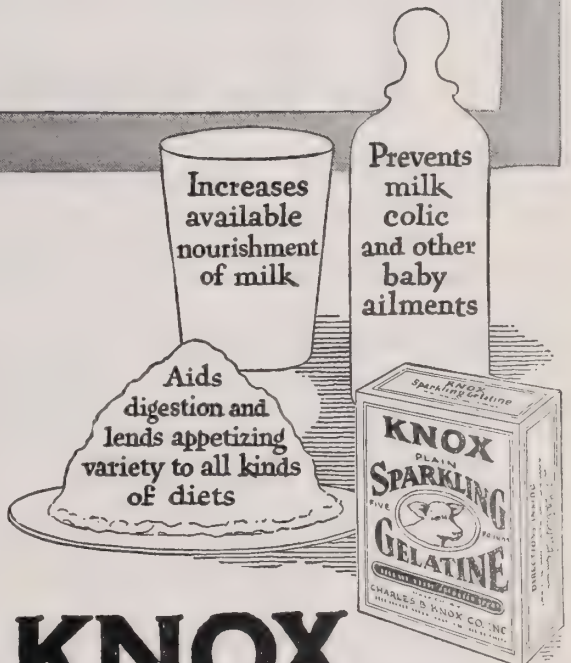
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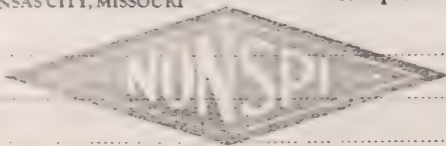
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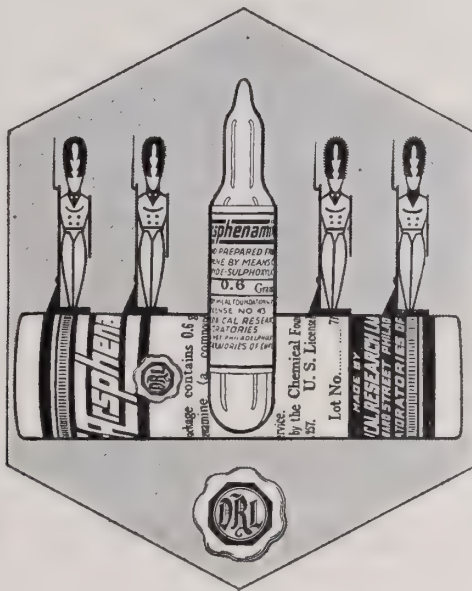
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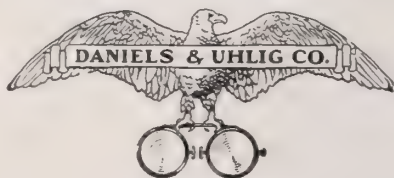
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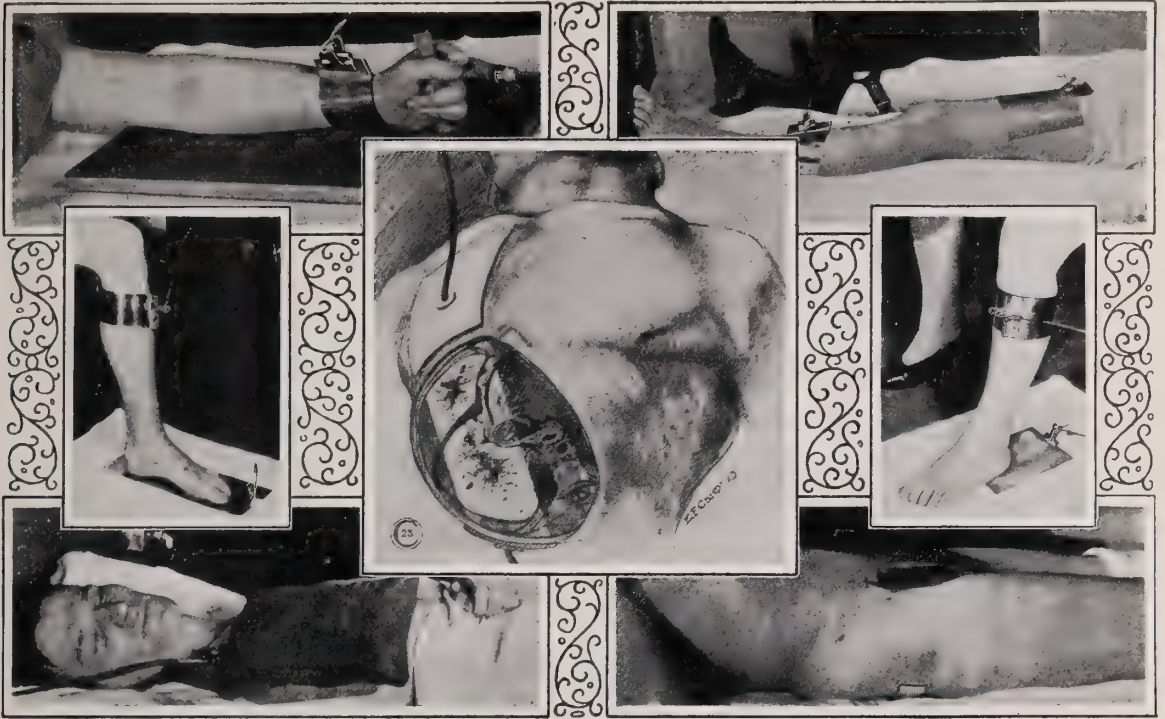
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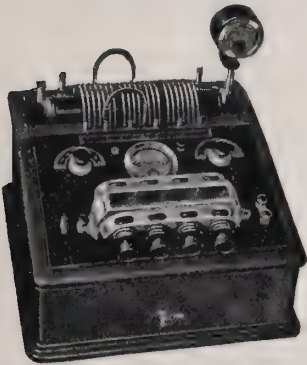
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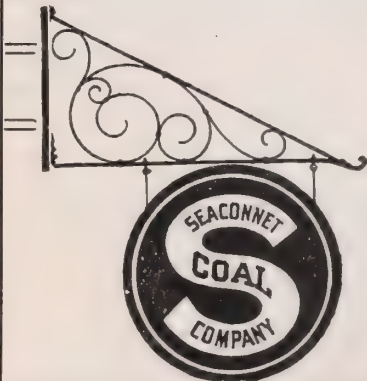
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ORIGINAL ARTICLES

THE PRESIDENT'S ANNUAL ADDRESS.*

BY HENRY J. HOYE, M.D.

Providence, R. I.

In accord with the by-laws of this association, it devolves upon me as retiring president to address the members on some phase of its work. First, I desire to express my appreciation of the uniform courtesy extended to me by the members of the association, which has added so much to the enjoyment of my term of office. We have been fortunate in having, I believe, very good programmes, in which men of distinction from other cities have played no small part. The attendance at the meetings has been good, and I have noted with pleasure that more members have taken part in the discussion of the papers, always a true index of the worth of a medical meeting. Surely one of the outstanding features of the past year was the joint meeting of the New England Heart Association with our association, when a number of the leading clinicians of Boston joined with our internists in a discussion of diseases of the heart. May I venture the hope that we definitely plan more such joint meetings each year, varying from time to time in the different branches of Medicine and Surgery and specialties?

Our association has a more important function than merely to gather once monthly for the reading and discussion of papers. There is besides the duty it owes the community in keeping it in touch with the great problem of caring for the sick and devising means for the betterment of their condition. So it is that I have thought it would be well to consider the hospital facilities of our city, and to see if there is not a gap between the institutional care of those patients suffering from acute diseases and those the victims of incurable disease. If there be such a gap as suggested, the problem

must be put up to the community. Again to this problem must there not be added the urgent need of a psychopathic hospital? In the Rhode Island Hospital, St. Joseph's Hospital, Homeopathic Hospital and Miriam Hospital, ample provision is made for patients with acute illnesses, medical and surgical; the City Hospital cares for the patients with the contagious diseases, while cases of Tuberculosis are treated at the State Sanatorium at Wallum Lake, and many of the chronic type at the City Hospital and the St. Joseph's Hospital Annex at Hillsgrove. As for obstetrical cases, there is the splendid service of the new Lying-In Hospital. As you well know many of the incurable cases of various diseases are cared for at the State Hospital at Howard. But what shall we say of the chronic cases, as of heart disease, diseases of the arteries of various degrees, of the kidneys, lungs, liver, gastro-intestinal tract, bones and the nervous system, which comprise at present, a not inconsiderable number of individuals, which in the future will add to their number?

It would be well here to define chronic diseases in the words of Dr. Ernst P. Boas, Medical Director of the Montefiore Hospital for Chronic Diseases, New York, as "those which so handicap the patient and are of such long duration that they incapacitate him and make necessary medical treatment for a period of several months or more. By and large they are diseases of the middle aged and elderly and because of the increasing lengthening of the span of life are assuming an ever growing importance. They are diseases of obscure origin, the nature of which is ill understood, and which tax to the utmost the diagnostic and therapeutic skill of the physician and the resources of the hospital."

We all know that most hospitals refuse admission to applicants suffering from chronic diseases, and if on occasion such an individual is admitted, he is discharged after a short stay in the hospital, irrespective of his condition and, it is to be feared, with little done therapeutically to better his condition. At a large hospital in New York City, of 1320 applicants refused admission in two years, 306 or 23% were rejected because they were vic-

*Read before the Providence Medical Association January 2nd, 1928.

tims of chronic organic disease. Municipal hospitals are compelled to admit these patients but they are, as a rule, shortly transferred to the almshouse.

In our general hospitals, the chief interest of the visiting and house staff is centered on the acute cases. Patients suffering from acute conditions, whether they be medical or surgical, naturally attract the attention of the visiting men. These patients, as a rule, stay but a short time in the hospital, their beds are soon filled on their leaving, while in the case of the chronic patients their stay is one of several months. It is certainly true that a chronic patient might occupy a bed for three months, which, in the same period, could have been devoted to the care of eight or nine patients suffering from acute medical or surgical conditions, but from the humanitarian point of view, why should we refuse service to the chronically ill and bestow it upon those who are acutely sick? Of course, general hospitals cannot always avoid admitting patients with chronic disease, as I have mentioned before, and again a patient may be admitted for a supposedly short stay and remain for a number of months. Indeed, if one made a survey of our own hospitals here in Providence, he would doubtless find many suffering from chronic disease among the patients, although this is probably in contravention of the general hospitals' policy. In a survey of the hospitals of Cincinnati, carried out by Dr. Bachmeyer, it was found that about 25% of the hospital population on the day of the census could be classed as chronic. In all probability this would hold true in most cities. The name incurable should not be given to these patients, for it is generally taken to mean that we are helpless to do anything for them; whereas "cura" in the Latin means to care for, and therefore in this sense these patients can be cured as well as any others.

About one-half the cases coming to the dispensaries belong to the class we are discussing, and as Dr. Boas well says, "the dispensaries do not have as a rule, the equipment, personnel, nor tradition to do justice to these complex diseases." They wander disconsolately from one clinic to another, generally receiving little benefit, and all too often find their last haven in the almshouse. If these patients could be in a hospital for chronic cases under careful supervision, many would be restored to active life in the community,

and therefore, economically, the gain would be very considerable. At the Cornell Clinic in New York City, where a careful analysis was made of patients coming to the Clinic, it was found that 58% had been sick more than six months before arrival there.

Recent statistics show that there are only about fifty-seven institutions on record under the general and much embracing name of "Homes for Chronic Invalids"; in about one-half of the states of our country there is not even a single institution of that kind on record. Is it because there is no need for such institutions? Or is it because the condition of these patients does not interest the medical men of the community? We believe there is a crying need at the present time to establish more institutions for chronic invalids, equipped to give these patients careful and conscientious study and scientific treatment for the purpose of improving their condition. From the point of view of institutional care as Dr. Boas says, these patients may be grouped in three categories. Class A. Those requiring medical study for diagnosis and treatment. Class B. Those requiring nursing care only. Class C. Those requiring custodial care only.

The management of each of these groups is a problem in itself and each class places different demands on institutional resources. It is most important to remember that patients do not remain indefinitely in one class. Thus a patient may be admitted in class A and in the course of a month so improve as to become a purely custodial case. On the other hand, it is just as common for a patient in Class B to develop some complication or aggravation of his illness which places him in Class A. Every Class C patient who dies is a Class A case during his terminal illness.

The proper care of a Class A patient demands a complete organization with a resident staff, an attending staff on which all the specialties are represented, complete laboratory, X-ray and operating room equipment, skilled nursing, and dietetic management. Class B patients require much less specialized attention but should command an excellent nursing service, controlled by a conscientious medical staff. Class C patients are retained in an institution not because they require hospital care, but because poverty makes their home care impossible. The problem is economic, not medical.

The patients who are the subject of this discussion form as Dr. Boas says in his paper. "The Challenge of the Chronic Patient," the bulk of the physicians private practice. Because of the complexity and chronicity of their illnesses, they are among the most difficult whom he is called upon to treat. A well-equipped and well-organized hospital for chronic diseases gives a valuable opportunity for continued study to the physicians on its staff and enables them to transfer to the community represented by their practices the advancement in the knowledge of chronic diseases achieved by co-operative investigation in an institution. Every medical student should receive part of his training in a chronic hospital. Progress in all lines of human endeavor depends upon systematic and co-ordinated study. The community that neglects its members who are suffering from chronic diseases, pays for its carelessness by receiving less efficient medical service. It becomes the duty of every institution that cares for the chronic sick, not alone to harbor these unfortunates until the disease has run its course, but also to be equipped for the study of the causes of the chronic ailments of mankind with a view to prevention.

Another urgent and pressing need in our community is the establishment of a psychopathic hospital. It is not arguable whether we ought to have such a hospital. The need is so very obvious that the only discussion ought to concern itself with not whether we should have one, but why haven't we one. As regards the diagnosis and treatment of early mental diseases, we are in the same position we were twenty-five years ago in the early diagnosis and treatment of Tuberculosis. While we have the hospital facilities for the treatment of advanced and well-established mental diseases, we haven't even the most inadequate hospital facilities for those early and border line cases of mental disturbance, which are becoming increasingly more frequent in our modern society, and which, if properly cared for, need never reach a mental hospital at all. Moreover, there is no way in which relatives of people who are presumed to be suffering from mild mental disturbance, can receive hospital diagnosis and treatment. It is erroneously believed that a psychopathic hospital will duplicate existing mental hospitals. Nothing could be further from the truth. The purpose of a psychopathic hospital is to keep people out of mental

hospitals, or if not successful in that, to send to the mental hospitals only those who absolutely require it. As matters stand now, there is no way of preventing serious mental disturbance, a thing which could be done very easily many times, if facilities were provided for meeting this particular problem. Altogether apart from the medical aspects of early mental disorders there is the very important economic problem to be considered, because, were a psychopathic hospital available, many wage earners and many mothers of families could be cured of their mental disorders, were they seen early enough, and, therefore, need never enter a chronic mental hospital. Moreover, there is in Providence absolutely no provision for the care of acute mental disturbances or border line cases of mental disorder, such as are being met in the practice of every physician daily. If the main purpose of modern medicine is so far as possible to prevent disease, then a psychopathic hospital is an urgent need in every community. The strains and stresses of our contemporary industrial life are falling with increasing frequency upon the brain and nervous system generally. And this requires that we be equipped to care for the inevitable results of such strains and stresses. A psychopathic hospital if it is to serve the purpose for which it is intended, must be situated in the city, where its facilities may be utilized by those who may require them. To make a psychopathic hospital a department of a more or less remote hospital for mental diseases, is to defeat its purpose, because if patients are to avail themselves of its services, such a hospital ought to be placed in some easily accessible situation. Unless someone has had in his own family some acute mental disorder present itself, he is scarcely able to recognize the urgent need of a psychopathic hospital to help in the solution of these distressing problems.

In this brief and altogether too sketchy account of our present and future medical needs, I have stressed only those which appear to me to be the most important and have passed over many things which are worthy of our thought and discussion.

In conclusion, I would fail not only in duty, but in gratitude, were I not to mention the always loyal and painstaking efforts of our secretary, Dr. Peter Pineo Chase, who has served us so faithfully for seven years. And now, may I end as I began, with the expression of my thanks for the

honor you conferred upon me, when, a year ago, you placed me in the line of succession of a long roll of distinguished predecessors.

RELATION OF PRACTISING PHYSICIAN TO THE PUBLIC HEALTH PROGRAM.*

By NORMAN M. MACLEOD, A.B., M.D.

Newport, R. I.

President of the Rhode Island Medical Society

What is the public health program? Some time ago Sedgwick stated that every worker in public health should have a proper working theory.

The first working theory was that of Miasm—that is, that disease was transmitted through the atmosphere and that certain places were undesirable breeding places of disease. Hippocrates, in his book on *Airs, Waters and Places*, makes some interesting deductions. He says, "A city that is exposed to hot winds will have waters that are plenteous and saltish; the heads of the inhabitants are of humid and pituitous constitution, and their bellies subject to frequent disorders, owing to the phlegm running down from the head. Infants are subject to attacks of convulsions and asthma. The men are subject to attacks of dysentery, diarrhea, chronic fevers in winter. Pleurisies, ardent fevers do not often occur, for such diseases are not apt to prevail where the bowels are loose."

Later in the middle ages an addition was made to this theory, namely that the individual constitution or diathesis determined the susceptibility to disease as well as the character of disease.

The theory of the contagion of disease was formulated first by Fracastorius in Italy in 1546, but his theory was so far out of accord with the belief of his times that it was given no credence by his contemporaries.

The first real step in preventive medicine was taken by Jenner in 1796, and it is gratifying to Rhode Islanders that a physician of Newport was the first to use this new method in America. Dr. Benjamin Waterhouse, in 1801, inoculated the first person in this country. Then later Pasteur, by his experiments, added more light and since that time the progress has been steady and con-

tinuous. Bacteriology is now a well established branch of the study of medicine and as Welch so pointedly says, "Bacteriology in the last half century, by revealing the micro-organisms responsible for disease and providing methods for their study and behavior, has transformed public health from a blundering empirical set of doctrines to a science and laid secure foundation for its further development along scientific lines."

This, then, must be the working theory of the public health officials of today that acute diseases are caused by micro-organisms and can therefore be recognized and that diseases can be prevented if proper steps can be taken.

What is the relation of the practicing physician to this program? There is no doubt that the failure or the success of this program depends to a great extent on the proper relation of the two elements. It is true, however, that many physicians have been apathetic in their support of public health measures and not a few have been definitely antagonistic. There must be some reason or reasons for this attitude. Some of the reasons are valid or have been valid.

Public health is a new science and with all new sciences there are many individuals connected with it who are not well trained. This lack of training when combined with an over enthusiasm and a willingness to use the tremendous police power given to such individuals has often lead to friction and has antagonized many conscientious physicians.

Furthermore, the entrance of politics in health work has caused much suspicion and justly so. The average man, both physician and layman has a suspicious fear of politics and there have been many occasions when this suspicion has been well grounded. It is only fair to say that in later years this domination has been growing less.

Inadequate compensation leads to positions taken by idealists with tendencies toward social medicine or incompetents who need the money. There is also the danger of the man in general practice taking on duties that lead to a conflict between the public protection and his personal relation to his own patient.

A very real reason to many physicians is the danger that the continued development of public health will lead to state medicine in the curative field as well as in the preventive. This fear has been accentuated by the attitude of many welfare

*Read before the Rhode Island Medical Society, December 1, 1927.

agencies that advocate state medicine as a panacea. There is a definite place for the state in the public health program. In our complex life of today with its multiplicity of contacts, no individual can live to himself alone. But the responsibility of the state must be properly used so that individual effort will be allowed to function. A recent editorial in the *Journal of the American Medical Association* is as follows: "Society, acting through representative government, has responsibilities in medical and health matters, but the line of demarcation between what is public and what is personal in matters of health must not be pushed back by government bureaus until government has invaded the privacy of the home and stands at the bedside of the individual." Many physicians, who have a profound respect for the public health program and who are eager to support it in every way, are still fearful that the social point of view will work in an insidious way to bring about the socialization of the medical profession. This fear undoubtedly prompted another editorial which says, "Times change and we with the times. The socialist demands an organized state medical practice; the sociologist apparently sees an almost inevitable trend toward such practice; the socialized physician sees great efficiency in such practice. But the psychologist, the humanist, the great practitioners of medicine see no hope for the real cure of ailing humanity in mechanistic methods which discount individual relationships."

Finally the practicing physician has been disturbed by the tendency of many public health officials to seek legislation to bring about results that should be secured by education. The great tendency of this age is regulation by law and it has been well stated by some authority that if no new laws could be passed for 10 years and the time devoted to education concerning the laws now existent, the world would make a great jump in progress. This education should be two-fold—the education of the physician himself in the remarkable advance in preventive medicine and his responsibilities connected with it as well as the education of the laity. The stories of the past that seem old to medical men are ever new to the growing generation and the wonderful change that has

been wrought in our civilization by the conquest of smallpox, typhoid and malaria, by the use of anti-toxin and by the great strides in infant welfare should be told and retold each year.

So far has been discussed the difficulties, or seeming difficulties in bringing about the proper relations between the physicians and public health officials. It is perfectly true that physicians have not always been co-operative because of pressure brought by patients. Failure to report contagious disease often results because of the inconvenience to the family of the patient. Many physicians have not helped as much as they could because of their own lack of knowledge and because they could not or would not change their routine. We are all creatures of habit and the physician is peculiarly so.

The proper relation can be secured by mutual understanding—the appreciation of the difficulties that each have to face. The physician should realize that the health officer has a hard position, that the number of times that he is praised is to the number of times that he is cursed is one to infinity; that the majority of public health officials are loyal, faithful servants of the community who have an ideal ever before them. The health officials, on the other hand, must remember that many of their duties were formerly performed by the practicing physician and that most physicians are individualists. If co-operation can be secured by mutual understanding then the future of the public health program is assured, for no real lasting success in promoting health of people and preventing disease can be attained without the active sympathy, support and participation of the profession. In closing may I commend to my fellow practitioners a statement on individualism presented by one Lloyd Paul Stryker.

"Individualism is vital to the welfare of the physician, it should be fostered and encouraged, but individualism which refuses to unite and to co-operate to bring about the greatest good for the greatest number may become a danger and a menace to the accomplishment of the great aims for which physicians have dedicated their lives, strength and high courage."

A STUDY OF EIGHTY CASES OF ACUTELY PERFORATED GASTRIC AND DUODENAL ULCER.*

DR. A. JIRÁSEK
Prof. of Surgery, Medical School, Prague,
Czecho-Slovakia, and

M. A. PERSKY, M.D.
Providence, R. I.

This paper is based on a critical study of eighty cases of acutely perforated peptic ulcer. They have been studied for a determination of the following points: (a) symptoms of onset; (b) presence or absence of previous gastric symptoms; (c) the condition most frequently beclouding the real diagnosis; (d) the effect of time interval between onset of perforation and operation upon the mortality; (e) the type of treatment; (f) the use or non use of drains; (g) the percentage of men and women affected; (h) causes of death; (i) the mortality rate; (j) the end results.

(A and B) All but four patients gave a history of some previous gastric trouble which could be ascribed to an ulcer existing some considerable time ante-dating the perforation; this gastric history varied from the shortest period of one week to the longest period of twenty years. It is obviously difficult to assume that all these gastric symptoms were related to a pre-existing ulcer, but in all of them, the past history contained factors which we could, in all justification, accept as being reflective of an existing or formative ulcer, especially in view of subsequent developments. The intermittent attacks of gastric disturbances are well brought out by the patients and in themselves seem to point to a tendency for an ulcer to undergo periods of remission from its acute pathology without treatment. The story of the perforation as seen from these cases has such a characteristic and constant sequence, that one could almost write the symptoms beforehand, read them to the patient, and find that they described quite accurately the specific case under consideration.

Suddenness of onset is characteristic and has not failed to be present and particularly mentioned by any patient in this series. This sudden onset of terrific pain has often been preceded by prodromal

symptoms of slight indigestion, rumblings in the stomach, or mild nausea; in others, a sudden sharp intense pain, often while the patient was at work, was the first indication of trouble.

The pain of perforated ulcer awakening a patient from a sound sleep, has in this series, with but four exceptions, been due to a duodenal ulcer. The regularity of this time element of pain being associated with duodenal and not gastric ulcer, is very vividly brought out in these cases; sixteen out of twenty patients with perforated duodenal ulcer having been awakened from their sleep with pain. The pain of perforated peptic ulcer was graded from a general unlocalized abdominal discomfort to a definite sharply circumscribed area, usually in the epigastric region, to the right or left of the median line. Several patients have spoken very bitterly of the uncomfortable pain at the tip of the right shoulder, and some, of its extending into the back. The pain occurring over the appendix region and often complicating the real diagnosis, is not a referred pain, but due to irritation of the peritoneum from the downward drainage of the gastric or duodenal contents following the perforation. This matter will be more completely dealt with later. Abdominal rigidity and spasm are very early accompaniments of the pain complaint, and in few cases, except an acute pancreatitis, will one, so early in a surgical belly, find so boardlike a general rigidity as in a perforated ulcer. The severity of the symptoms are determined by the size of the perforation, the amount of leakage from the stomach or duodenum, and by the rapidity with which nature seals over the opening in the viscus. When one does gastrointestinal surgery and recalls the ease with which the mucous membrane will bleed, it becomes a matter of speculation as to why, in perforated ulcers. Bloody vomitus is so infrequent. While vomiting has been a frequent complaint, in only seven cases was there fresh blood or coffee ground particles suggestive of digested hemoglobin.

We have been impressed with the discrepancy between findings at operation and the physical condition of the patient on admission as affected pulse and temperature. Time after time, a boardlike rigidity, a history of repeated vomiting and terrific pain, would be productive of a pulse of 80 or 90 and a normal or only slightly elevated temperature. This does not mean that this series does not show patients reacting most severely to the

*From the 1st. Surgical University Clinic of Prof. A. Jirásek. Read before the Jacobi Medical Club of R. I., Sept. 28th, 1927.

acute peritonitis following upon the perforation, with a pulse of 110-140, with high temperature and other signs of intense shock. But that such an abdominal condition can occur and show such comparatively mild pulse and temperature reaction is worthy of remembrance. As exemplifying this statement we mention a patient with a perforation of 60 hours duration with a pulse of only 112. In this respect it is analogous to some cases of perforated appendix with a pulse only slightly increased and an almost normal temperature.

(c) As to diagnosis: the records show that the condition most frequently leading one astray, was to mistake a perforated ulcer for an acute appendix. Mistaken diagnoses occurred in 22 cases in this series as shown in the following table:

TABLE 1.

Conditions confused with acutely perforated ulcer:

Acute Gall Bladder.....	3 cases
Acute Appendicitis	16 cases
Acute Pancreatitis	1 case
Traumatic Rupture of Stomach.....	1 case
No Diagnosis	1 case

To call a perforated ulcer an acute appendix, is, in spite of the different regions involved, not as impossible as would appear on first thought. The perforation of the ulcer is followed by leakage into the free peritoneal cavity of gastric or duodenal contents, and its pathway is along the ascending colon down the caecum and then into the pelvis. The irritation produced by the chyme, free HCl or bile or all of these combined, around the appendix, is so great, that this new pain, by its intensity often masks the symptoms of the original pathology. One may argue from this that the most advantageous place for drainage in perforated ulcers would be the appendix region—to drain from the pelvis only inviting a further area to be involved by the gastric and duodenal outpouring in its downward course. A careful history, provided the patient is in condition to give one, is of utmost import to avoid making a wrong diagnosis. (d) It must present itself as a self-evident fact that the time element as between onset of the perforation and the operative treatment, plays an important part in the prognosis. We have here a condition doing constant harm to the body cells by its outpouring into the free peritoneal

cavity of material both toxic and irritating to the system. The sooner one can eliminate this vicious condition, the sooner does the individual begin his fight to combat the harm already done. We have found in this series that the time elapsing between perforation and operation varied from 3-96 hours and that it had a decidedly determining effect upon the eventual result. The appended table is self-explanatory:

TABLE 2.

Number of cases operated on up to 6 hours after perforation and result:

Total	12 cases
Recovered	10 cases
Died	2 cases
Mortality	16 2-3%

Number of cases operated on from 6 up to 12 hours after perforation and result:

Total	21 cases
Recovered	15 cases
Died	6 cases
Mortality	28½%

Number of cases operated on from 12 up to 24 hours after perforation and result:

Total	27 cases
Recovered	18 cases
Died	9 cases
Mortality	33.3%

Number of cases operated on 24 hours after onset and result:

Total	20 cases
Recovered	3 cases
Died	17 cases
Mortality	85%

These statistics very strongly bear out the fact that the sooner operation follows perforation the better is the prognosis. (e) This Clinic treats its perforated ulcers on the principle of entering the abdomen quickly, and getting out of it as quickly as consistent with the proper performance of the surgery indicated. In other words, do as much as the patient's condition absolutely demands and no more. It countenances with considerable impatience the advocacy of routine gastro-enterostomies or resections in acutely perforated ulcers. The treatment given here is to cauterize the ulcer with the actual cautery, close the perforation with a layer of penetrating

sutures, and cover this with a row of Lembert sutures; to cut off a piece of omentum and sew it over the final layer of sutures as an added protection against leakage. The rapidity with which this free omentum graft causes adhesions between itself and the ulcer area is most surprising; it has been found, in those cases coming to autopsy shortly after operation, that 12 hours is time enough to produce adhesions of sufficient firmness to occlude the perforated area. In only four cases was a posterior gastro-enterostomy done and this because of pyloric occlusion following suturing of the ulcer; in one case, a resection, because the size of the perforation and the great degree of induration about it, making sewing impossible; and in one instance, a rubber tube was placed into the perforation converting it into a gastrostomy, also because of the impossibility of suturing. In this series no ulcer was excised with the knife, the actual cautery being used, and no Finney operation was performed. In contrast to this comparatively simple treatment of a serious condition, it is of interest to make slight comment on the principle advocated by Prof. Kreuter.¹ He strongly recommends resection in all cases of perforated ulcer, except in the most extreme moribund condition of the patient. It seems like flying in the face of established surgical principle to undertake so formidable a procedure with the condition of the patient so precarious, and septic material likely to be disseminated over parts of the peritoneal cavity which may as yet have escaped infection.

(f) There is a minority of surgeons who possesses the masterly courage to close the abdomen following an operation for perforated ulcer without the use of drains. In this series of cases only four were treated without drainage—the remainder with drainage; the drainage material being gauze or cigarette drain, and the location either at the site of perforation, at the appendix, in the pelvis, or the combination of any of these regions. The average length of time for which they were left was 6 days. In this clinic pelvic drainage is most commonly employed unless a right rectus incision was made because the condition was erroneously diagnosed as an acute appendicitis, in which

case drainage both in the ileo-caecal and pelvic regions were used. (g) This series of cases had ten female patients, 12½%, as compared to 87½% of male patients; their ages varied from 22 to 56 years of age.² Autopsies were done on all patients who died and the causes of death pathologically determined; they were as follows:

TABLE 3.

Loosening of suture with subsequent	
peritonitis	1 case
Acute dilatation of heart.....	2 cases
Lobar or broncho-pneumonia	5 cases
Hemorrhage	1 case
Peritonitis	All other deaths

As was to be expected, peritonitis was a major cause of death and complications such as cardiac failure and pneumonias contribute to the causes of mortality. We have had no deaths from sub-phrenic abscess. It is of interest to note that in only one case could death be attributed to a faulty suture technique—this undoubtedly contributing to the maintenance of the terminal peritonitis. The location of the ulcers treated in this series is given in the following table:

TABLE 4.

Small curvature	30 cases
Anterior stomach wall	20 cases
Duodenum (ant. wall)	18 cases
Pylorus	6 cases
Large curvature	3 cases
Duodenum (post wall)	2 cases
Post wall of stomach	1 case

As the value of every effort must be interpreted in the light of its final accomplishment for good, we gave in some considerable detail, the operative mortality (see table 2). Several factors must be borne in mind forming any conclusions based on these figures. They must be studied in conjunction with the time interval between onset of the rupture and operation, for it would be manifestly unfair to expect the same results to follow an operation done 15 hours following a perforation as would one done five hours after. It must also be taken into consideration that the majority of these patients were of the hardy peasant type, living

¹Kreuter E. Prof. "Ueber die Zulassigkeit der Primären Magenresektion bei frei Perforierten Magenduodenalgeschwuren." Klinische Wochenschrift No. 16, Pages 742-743. April 16, 1927.

²One of us (M. A. P.) has had occasion to operate for a perforated gastric ulcer on a youngster of five years; the correct diagnosis not being made until after the abdomen was opened.

some considerable distance from the Clinic and not accustomed to seek help for sudden aches and pains, sometimes going about their accustomed duties for hours following an acute perforation. The death rate in this series was 42½%. The mortality in the 31 cases of Prof. Kreuter operated on during the past five years by palliative measures was 38.7%; following radical treatment in 31 cases his mortality was 16.2%. His table follows (1):

	6 hours deaths	12 hours deaths	Over 12 hours deaths	Mortality deaths
Palliative	8.1	9.1	14.11	31.12—38.7%
Radical	17.1	7.1	7.3	31.5 —16.2%

This matter of mortality rate is well expressed by Dr. J. B. Stenbuck³ — “of the 88 patients 23 died i.e. 31%. The death rate in the practice of surgeons in different hospitals and different localities may vary considerably, for there is not nearly the uniformity in percentage of mortality as in the case . . . of acute appendicitis. From year to year the mortality changes, so that in one the rate is 0 and in another as high as 54%.” A follow up record of 26 patients of this series gave the following results:

Absolutely well	18
Occasional mild gastric symptoms	3
Relieved 6 to 9 months after operation	4
Failed in any improvement	1

CONCLUSIONS AND SUMMARY.

(1) The symptoms of perforated ulcer present themselves with such a degree of regularity that the diagnosis should not often be missed. It is a disease of early maturity to past middle age. (22 to 56 years in this study.)

(2) The conditions most likely to be confused with it are acute appendicitis; more remotely an acute pancreatitis, or gall bladder.

(3) 12½% of patients in this series were women.

(4) The palliative treatment for perforated ulcer was done on all but five cases and in these further surgery was necessary because of very definite indications.

(5) The mortality was 45½%. The maximum of recoveries occur in those cases operated on up to the first six hours; it is still favorable up to 12 hours, from which time on there is a rapid fall in the number of recoveries.

(6) The shortest time interval between perforation and operation with recovery, was 4 hours—the longest was 72 hours.

(7) All but four cases gave a past history of gastric symptoms.

(8) The pulse rate is no criterion as to the findings at operation, nor does it bear any constant relation to the time interval as between perforation and operation; we have in this series variations from a pulse of 120 four hours after perforation to one of only 80, eighteen hours after perforation. The pulse rate is influenced by many factors especially the size of the perforation, its proximity to a meal and the speed with which Nature seals the opening against leakage.

(9) We feel that drainage still occupies an important place in this type of surgery and should be placed either to ulcer, right iliac region or to the pelvis.

(10) A diffuse peritonitis is the immediate cause of most deaths.

(11) The overwhelming frequency of perforation, either of the stomach or duodenum, occurring near the pylorus, leads one to feel that this area, through its constant traumatization during the process of digestion, is a “locus minoris resistance.”

(12) It is a significant fact that 16 of our 20 perforated duodenal ulcer cases were awakened from a sound sleep.

(13) The order of frequency of the location of the ulcers in this series were: small curvature, anterior stomach wall, anterior duodenal wall, pylorus, large curvature, posterior duodenal wall, and posterior wall of stomach.

(14) We cannot conceive of radical surgery as a routine measure in the treatment of perforated ulcers. We realize its place and have used it in certain well-defined cases; but to assign to it the same frequency of procedure that is accorded it in chronic ulcers is, in our opinion, unjustified. A masterly restraint of ambitious surgery will tend to a higher degree of recoveries from a condition already fraught with considerable danger.

³Stenbuck J. B. “Causes of Death following operations for Perforated Gastric and Duodenal Ulcer.” *Annals of Surgery* Vol. LXXXV., Page 713. May, 1927.

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EDITORIALS

INCREASING HOSPITALIZATION

It is astonishing to learn that more than 60% of all deaths in New York City take place in hospitals. It only confirms the fact of greatly increased patronage of hospitals by the sick and injured.

Until recently hospitals were constructed for the care of the sick among poor people. It is only recently that people of means have overcome their aversion to hospitals. It was the excellent medi-

cal care and comforts supplied in private wards of charity hospitals which brought this about. The private patients accepted in charity hospitals were first taken in to accommodate the visiting staff and add something to the revenue of the hospital. Those who were able to pay began to learn that the charity patients were receiving treatment that could not be furnished at home at any cost. This is particularly true of patients requiring surgical attention. Not so many years ago considerable home operating was done but there is now very little of it except where hospitals are not accessible. The result has been that during the last

ten years or more; a very large number of hospitals have increased their capacity for private patients and many private hospitals have sprung up all over the country.

Strange as it may seem the number of charity patients during the war and for a period thereafter, shrunk. This was indicated by the number of empty beds in the hospitals, particularly in medical wards. At the same time the number of people applying for treatment in the out patient department noticeably decreased. This, of course, was a result of the great prosperity enjoyed by the country. During the last five years the amount of charity work has increased. However, the growth of hospitals recently has been largely due to making provision for private patients rather than for charity patients.

It is interesting to speculate upon what effect increased hospitalization will have on the practice of medicine and the kind of service which the public will receive. In the large cities where housing and the servant problem is a distressing one, hospitalization of people who can afford to pay the hospital and for medical services will probably increase. It will, however, be governed by the prosperity of the country and the percentage of people who are able to pay for such services. Hospitalization of this class of patients is welcomed by physicians, particularly in communities where there are both closed hospitals and hospitals to which all reputable physicians can send their patients.

The hospitalization of charity patients, however, presents a rather different problem. The *per capita* cost of caring for these patients has doubled during the past ten or fifteen years. This has brought about the necessity of providing better laboratory and X-ray service, the introduction of social service, more expensive forms of treatment and the demand from the public that better food, service and nursing care be provided. In order to meet the demands made upon them hospital superintendents endeavor to shorten the stay of each patient as much as possible. Convalescence can as well take place at home or in a convalescent home with which many hospitals are now supplied.

This shortening of hospital stay is a very healthy sign and a very significant sign. It reflects creditably upon the promptness of treatment and upon its efficiency. Even though the per capita

cost is high the patient gets something for his money and the total cost to the hospital for each patient may be no greater than when the stay was twice as long. The modern hospital should not be a boarding house. The expense is too great.

For diseases of mild character and obvious diagnosis, and for convalescents, home treatment is cheaper even if the community has to supply physicians to the homes of the very poor. This is a phase of medical service which should be given more attention and study. Ambulatory patients can, of course, go to a doctor's office or attend a clinic.

Many physicians complain that the hospitals are taking bread out of their mouths. This may be true but the medical profession must realize that people will go where they can receive the best service. If physicians will only keep up to date, ally themselves with hospitals, if possible, and utilize the hospitals to assist them in diagnosis and treatment they would have less reason to complain.

The practice of medicine is in a transition stage. No one really knows what should be done but a study of the problem from a broad viewpoint and the application of common sense will lead to a solution beneficial to the physician as well as the public.

THE DIAGNOSTICIAN

The division of medicine into various specialties has resulted from the increasing mass of medical science which has become too great to be mastered by any one mind. The division is also economically important. The surgeon, who must keep operative appointments, cannot be hampered by obstetrical practice. The obstetrician must not take the chance of infection from contact with infectious diseases. The busy practitioner of medicine has not time to perfect himself in surgical technic. And so around the circle. Of all medical specialists the diagnostician should hold the most important position. Without accurate diagnosis, all medical work is useless and often harmful. The diagnosticians of the past generation were trained in the autopsy room and retained a connection with the pathological department which served as a constant check on their accuracy. Some of these men were credited with extensive series

of diagnoses free from error for periods of years. A mistaken diagnosis was a source of deep chagrin. The present tendency is to neglect the autopsy room and the pathological laboratory as checks on accurate diagnosis, depending on blood chemistry rather than trained intuition for diagnosis. The results, whether from inaccuracy in the tests or from misinterpretation of data, are often faulty. A correct diagnosis is not a matter of course but a cause for congratulation. There is a distinct field for the diagnostician, a specialist trained in the autopsy room and the laboratory, and familiar with every aid to diagnosis. With some natural gift of intuition, with proper training, and with the benefit of all the modern physical and chemical aids to diagnosis, this specialist should soon dominate all others.

INVENIMUS EAM IN CAMPIS SYLVAE

It is with considerable satisfaction that the success of the out of door propaganda which it has been urging for so long. Indeed, sports now occupy such a conspicuous place in the life of all sorts and conditions of men that there is a serious question if they may not be overdone. In the incessant and untiring preaching of the great out of doors, in the broadcasting of popular articles in magazines by medical writers, and in private consultation there has been no dispute whatever as to the beneficial and healthful effects of out of door life and exercise—the profession has been and is unanimous and agreed. The occasional absurdities of the lay press can be forgiven because of the tremendous impetus it has given the movement by its wide spread publications. The occasional death from over-exercise in those who should not have taken it is no argument except that one should know oneself and not draw from an already exhausted physical account. It is rather an argument for more intelligent exercise, for the supervision of such exercise, and for more frequent examination of the individual. These occasional examinations have been interpreted as causing introspection and the exaggeration of the importance of existing physical defects. They are rather the means of prolonging life, of partial if not complete restoration to health and the replacement of a comfort and happiness which comes only with physical well being and satisfaction.

Popular articles upon diet are for the most part founded on scientific principles, most of them are by physicians; if the weight be reduced for esthetic and personal reasons, they participate in the many physical benefits such a process confers; the degenerative processes due to overnutrition are postponed or eliminated. It might seem that in many ways people are becoming sensible and perhaps economical. The foibles of fashion and so-called society are not always beneficial to the race but for this one the physical economist should be thankful. The same cannot be said for prevailing styles of clothing, for many persons are not suitably clad in the colder months. The doctrine of the same clothing the year round is neither sensible, hygienic nor scientific and the profession should urge, even to its profitable patients, enough clothing to keep the body warm and the wintry blast from the great vessel area and other vulnerable and susceptible parts. Many persons are in a continued state of ill health because of overheated rooms, which must be kept so in order to keep the deluded warm; pneumonia, colds and their many sequelae result from this absurdity of fashion.

Of the beauty parlor, of its many ramifications and arborescent invasions of the private purse, we must confess to mingled feelings. Of comic strip amusement at the results of its vogue and of sorrow that so many spend so much upon that which satisfieth not—also that the beauty therapist is paid and the doctor is not. Another argument for hygiene and out of door life; for extended observations in lands where the remarkable are those who do use cosmetics have conclusively shown that simplest of ablutions produce matchless complexions and that complexity of preparations are not necessary or desirable. Some of the questions asked prospective licensees are of interest and the medical man is furnished food for thought and self-examination—in fact, one doctor was overheard asking another, "How many bones are there in the cranium?" He replied, "What's the cranium, anyway?"

As to the components which combine to make the fingernails, we rather think that we should be obliged to consult our library rather than the tables of our memory which is befogged by recollections of chitin, unguiculus, phosphatic collagen, and other phantasmagoria. As to the technical

word for itch, the question might arise, what kind and where? Not long ago one of the questions asked of nurses was, "Describe the ankle joint." This would be rather a large order even for a surgeon. We should like to see an ankle joint constructed according to the descriptions offered at this examination for nurses. The wholesale rejection of experienced hairdressers is an interesting subjection for inquiry, thought and perhaps remedy.

DE SENECTUTE.*

WILLIAM R. WHITE, M.D.
Providence, R. I.

You all have read or else been told
How once, at time now grown quite old,
A learned Roman speeches made
That bright in classic lore have stayed.

Likewise you this must also know,
That Roman's name was Cicero;
And that the speeches of the sage
Embodied thoughts about old age.

In Latin tongue, so rich and pure,
That it through centuries must endure,
His mind with soundest wisdom filled
Behind the voice that thousands thrilled.

And thus it was that Cicero,
So many hundred years ago,
Enrolled himself on scroll of fame
Where classic glory blazed his name.

And now my friends we'll take a drop,
Indeed 'twill seem much like a flop;
From ancient days and classic Rome
Let's come right here and feel at home.

Of course both you and I well know
I can't orate like Cicero.
But still I'll try on this our stage
To talk to you about old age.

Tonight of course I know its true
I older am than most of you.
But what tonight is true of me
As true, sometime of you may be.

Therefore I beg you listen well
To this queer tale I have to tell.
I'll hasten on, and what is worse
I aim to tell you it in verse.

I've seen the years go fleeting by
And dates and figures do not lie;
Sometimes I seem almost to doubt
My span of life's so nearly out.

I stand before you quite erect,
Senile decay do you detect?
Is voice with which to you I speak
What you'd call halting, thin or weak?

Indeed, I want it understood
My health right now is very good.
In fact I can quite truly tell,
Than now I never felt more well.

My strength it does not overtax
To push a saw or swing an axe;
In winter I don't need to go
For outside help to shovel snow.

And when the street I walk along
I feel I'm going fairly strong,
And it would "faze" me not at all
To knock some flies or chase a ball.

But wait, it would indeed be strange
If all these years had brought no change.
Some changes are for you to see,
While others will be told by me.

Some things 'twere well for you to learn,
For quite too soon 'twill be your turn.
I ask you to remember this
The wheel of time ne'er makes a miss.

So when the try-out comes to me
I know full well how it will be.
To fight life's fight and play life's game
I conscious am I'm not the same.

For active work I rank myself
As full three quarters on the shelf;
But let me trail along our road
And do my bit with lighter load.

While on the whole I think that I
As old men go am fairly spry,
Yet gladly I depend on you
To do the things I cannot do.

*Read before the Providence Medical Association, December 5, 1927.

Beginning now right at my crown
I'll comment make as I pass down.
With your own eyes you now will see
What heaped up years have done to me.

I had a lot of dark brown hair,
It's mostly gone, I wonder where.
Artistically on side 'twould part,
Now broad midway allows no art.

To tell you when or how it went
I think I'd best make no attempt.
In loving kindness let me say
Some younger docs are that same way.

A beard I had, dark brown and black,
The color's gone, it won't come back.
Instead you see, to take its place,
A pallid fringe surrounds my face.

I once had vision, strong and clear,
It normal was for far and near.
But now a lens I surely need
Or else I cannot write or read.

Though I see name on trolley car
A block away or twice as far,
Yet this thought often startles me,
Without my glass I'd helpless be.

My hearing once was also clear
But now in front I sit quite near;
Or else I have to count my cost
When some of speaker's words are lost.

I once had normal set of teeth,
Sixteen above, the same beneath.
But now I find within my face
By far too much of toothless space.

Although I've lingered pretty late
As yet I've worn no dental plate.
I would not say that "beats the Dutch,"
But some, less old, can't say as much.

In front a few incisors meet,
So, like a rodent, I must eat.
It's known to me, likewise to you,
A guy needs teeth to rightly chew.

And as I also fully know
I can't expect new teeth to grow,
I think quite soon 'twill be my pleasure
To have some dentist take my measure.

As to my weight, I tip the beam
At notch the same as when eighteen.
All I will say concerning that,
I've been too spry to gather fat.

Too many friends who took on weight
Too early reached the pearly gate.
So to myself I really seem
More safe for being rather lean.

Objectively need you be told
That I've been busy growing old?
Subjective proofs that you don't see
Most vividly are known to me.

When young I rarely knew fatigue,
I'd walk a mile, ten miles, a league.
But now at first or second mile
I slow me down and rest a while.

I'd hay twelve hours in summer's sun
And play baseball when work was done.
But now when tired, with weary head,
I play not ball but seek my bed.

It shames me not that I confess
Endurance, yes, and strength are less,
But glad am I and thankful too
There's still a lot that I can do.

I've less ambition, much less zest,
I seek more leisure, need more rest.
I hustle less; in life's great race
I watch my step and know my place.

Of mental strength I'd best not speak,
You're hearing proof it's pretty weak.
But if not old, what fun I'd miss,
The writing up of theme like this.

One may surmise I've in reserve
A good supply of active nerve,
Or food like this I would not serve;
For same your thanks I don't deserve.

My memory's keen for long ago;
For yesterday it's mighty slow.
I put my glasses, pencil, pen
In some convenient place, and then,

I look for them and almost swear
Because they are no longer there.
I tell my wife where they should be
And knowingly she looks at me,

And soon returns, with smiling face,
The lost she's found in different place.
I growl and say "Who moved my things?"
She says, "Perhaps they grew some wings."

Sometimes when on the street I see
A man in haste approaching me.
"Why Doctor White! how do you do?"
I grin and say, "The same to you."

But all the time I pound my brain
And wonder, what can be his name?
His eyes and nose and mouth and chin
Remind me that I once knew him.

I question him to find a clew
That might reveal the name I knew.
The name my memory cannot trace,
The name I can't make fit his face.

Embarrassing, I'll say it is,
To greet a once familiar phiz;
To look, and think a great big bluff,
To lose the name is surely tough.

While toys with which I used to play
I see as though 'twere yesterday.
My playmates' names come back to me
As I their faces seem to see.

Indeed I think it true must be
That memory is a mystery
How things all through ones life will stay,
While one forgets since yesterday.

This second childhood why deplore?
I'm seventeen and three score more
And while my strenuous work is done
I still do something, have some fun.

When here tonight to you I came
I needed neither crutch nor cane.
When I ascended yonder stairs
I think I took the steps in pairs.

I do not need excuse to give
That I can now more restful live.
I do not care o'er world to roam,
My greatest joy I find at home.

I have three elements of wealth,
My home and happiness and health.
Companionship and kindest care,
My lightened burdens others share.

Three things that help my heart's desire,
My book, my dog, my open fire.
When tired I close my eyes and dream,
My life seems pictured on a screen.

Thus I review from time to time
Experiences that once were mine.
Life's joys and hopes and sorrows too
Again appear within my view.

What marvelous gift it is to age
To thus again review life's page.
Through three score years and ten to roam
Till back again at boyhood's home.

Yes memory is a wondrous gift,
Enabling us in thought to drift
Again amidst life's sweetest joys
That have been ours as men and boys.

How long may one desire to live?
As long as service one can give,
And help promote a kindly plan
For uplift of ones fellow man.

The years once lived are past and gone,
One's life progresses on and on.
This gravest question man must face,
The future of the human race.

The aging man must answer crave,
What fate awaits beyond the grave?
When man lays earthly burdens down
Will conscious life existence crown?

Will he again behold once more
His loved ones who have gone before?
Will recognition bless him then?
Will they know him? Will he know them?

That knowledge is denied us here,
What waits beyond is not made clear.
When final summons comes to me
Shall I then know, shall I then see?

My fellows you have listened well
To queersome tale I had to tell.
I promise that my rhythmic pen
Shall not get busy soon again.

I know I'm way behind the times
Though I can still coaptate rhymes,
So on the whole it seems to me
That this had best my swan song be.

LETTER TO THE EDITOR

My dear Editor:

It was gratifying to the State Board of Health to know that the Rhode Island State Medical Society endorses fully the plan for a survey to be made in this state of the causes of maternal mortality. This interest was manifest by recent action of the State Medical Society.

This survey will be made by a representative of the Children's Bureau in Washington. It will not be made in such a way as to embarrass the physician in his practice. Information will not be sought in the homes, but through the co-operation of the medical men.

When we consider that maternal mortality is one of the dark spots in public health work in the United States, this country with all its wealth standing next to the lowest in the list of twenty countries, makes the problem appear to me one that should arouse the interest and concern of all medical men. I was gratified to learn that Rhode Island makes a better showing in regard to this matter than any, except possibly one state.

I shall be very much pleased if every physician in this state when called upon by the investigator will supply such information as he may have, thereby lending great assistance in this important matter.

Respectfully

B. U. RICHARDS, M.D.,
Commissioner of Public Health

SOCIETIES

PROVIDENCE MEDICAL ASSOCIATION.

The regular monthly meeting of the Providence Medical Association was called to order by the President, Dr. Henry J. Hoye, Monday evening, December 5, 1927, at 8:47 o'clock.

The records of the last meeting were read and approved. The secretary announced the nomination of officers and committees for the ensuing year.

NOMINATION OF OFFICERS

For President—Edward S. Brackett, M.D.
For Vice-President—Arthur H. Ruggles, M.D.
For Secretary—Peter Pineo Chase, M.D.
For Treasurer—Charles F. Deacon, M.D.

For Member of the Standing Committee for five years—Henry J. Hoye, M.D.

For Trustee of the Rhode Island Medical Library for one year—N. Darrell Harvey, M.D.

For Reading Room Committee—George S. Mathews, M.D.; Elihu Wing, M.D.; Guy W. Wells, M.D.

For Delegates to the House of Delegates of the Rhode Island Medical Society:

E. S. Cameron, M.D.	C. W. Skelton, M.D.
W. H. Higgins, M.D.	R. S. Wilcox, M.D.
A. J. McLoughlin, M.D.	J. W. Sweeney, M.D.
P. P. Chase, M.D.	P. Appleton, M.D.
F. E. McEvoy, M.D.	W. Pickles, M.D.
A. Corvese, M.D.	A. A. Barrows, M.D.
M. Adelman, M.D.	G. H. Crooker, M.D.
P. C. Cook, M.D.	C. H. Jameson, M.D.
W. S. Streker, M.D.	

The first paper of the evening was read by Dr. John W. Keefe on "Aids to Greater Safety in Operation." He first reported an obstetrical case. A careful estimate of the patient's ability to stand operation comes first. The surgeon himself should acquaint himself with all details before operation. Not one portion of the anatomy or phase of the patient should obscure the whole, and the specialist should be first of all a general practitioner. He discussed some of the general problems of the surgeon, dwelling particularly on the loss of sponges in the abdominal cavity, and again stressed the surgeon's broad view of his cases. The paper was discussed by Dr. A. T. Jones, Dr. Charles W. Higgins, Dr. I. H. Noyes and Dr. Keefe.

The second paper was by Dr. Frank J. McCabe on "Focal Infection and Its Relation to Ophthalmology." The primary foci are usually along mucus surfaces on the skin. Secondary can occur in lymph nodes or deep tissues. The most important location is about the mouth and nose. He gave a statistical report on 200 eye cases showing the distribution of foci throughout the body. The paper was discussed by Dr. L. B. Porter, Dr. G. W. Van Benschoten, Dr. C. A. McDonald, Dr. Mihran Chapien, Dr. R. F. Hacknig, Dr. H. C. Messinger, and Dr. McCabe.

The third paper, by Dr. William R. White, was entitled "De Senectute." This was a delightfully rhymed statement of Dr. White's estimate of his present situation and views of life, and was

greeted with a great burst of applause from the meeting. On the motion of Dr. A. T. Jones, Dr. White was given a rising vote of thanks.

The meeting adjourned at 10:38 P. M., Attendance 72. Collation was served.

Respectfully submitted,

PETER PINEO CHASE, *Secretary*

The annual meeting of the Providence Medical Association was called to order by the President, Dr. Henry J. Hoye, Monday evening, January 2, 1928, at 9 o'clock. The records of last meeting were read and approved.

The reports of the Secretary, Treasurer, Standing Committee and Reading Room Committee were approved and ordered placed on file.

The President's annual address was read by Dr. Henry J. Hoye. He discussed the hospital situation in Providence with reference to the care of chronic diseases. These are usually of the middle aged and elderly class which is being increased by modern sanitary and hygienic methods. Only occasionally do these get into hospitals primarily for acute cases. With proper care which they do not get in the usual clinic many can be returned to active life. Class A. Those requiring medical study for diagnosis and treatment. B. Those requiring nursing care only. C. Those requiring custodial care only. Patients may change from class to class. These cases comprise a large proportion of private practice and such hospitals offer opportunity for working out many problems. Every medical student should receive part of his training in such a hospital. A psychopathic hospital is needed here. The only question is—Why do we not have it? Such a hospital would save many cases now coming to mental hospitals. Economically this would be valuable returning many to active life. It should be in an easily accessible place.

It was voted to suspend the by-laws and have the Secretary cast a ballot electing Dr. Edward S. Brackett president for the ensuing year. He was escorted to the chair by Dr. Kingman and Dr. Donley. After a few remarks by the new President the remaining officers and committees were elected in a similar manner. The President appointed Collation Committee, C. Merrill Gibson, Craig S. Houston; Publicity Committee, John Walsh, Creighton W. Skelton, Roland Hammond.

The Standing Committee having approved their applications the following were admitted to membership: Herman A. Lawson, Frederick A. Harvey, Julius G. Kelley, Clarence H. Woodmansee, Joseph Franklyn, Kathleen M. Barr, Joseph C. Johnston.

It was voted to make the dues for the ensuing year \$5.00. Two hundred dollars was voted to the Medical Library for the purchase of Medical Journals; \$250.00 for binding medical journals and \$450.00 to the Rhode Island Medical Society for the use of the Medical Library. Dr. Skelton called attention to the advertisement in the Rhode Island Medical Journal of the clinical week of the American College of Physicians. Dr. Jameson reported a case of severe phlebitis following prostatectomy. The patient had chills and fever and massive edema of the leg and appeared to be failing rapidly when following 20 cc. of mercurochrome intravenously the temperature and pulse fell to normal next day but rose again soon when another dose was followed by a severe reaction a falling of temperature and pulse and in a few days a sudden disappearance of the edema. Dr. Sanborn reported a case of apparent tonsillitis followed by a rigid neck and pain and in a few days a loss of power of the left leg. This was apparently anterior poboynelitis and has resulted in recovery. Dr. Sanborn urged that the society endorse Dr. Hoye's paper especially the part in relation to the need of a psychopathic ward and after much discussion it was voted that the society extend to the city hospital commission a hearty endorsement of the project for a psychopathic ward at the city hospital and that this action be referred to the Publicity Commission. It was also voted that a committee consisting of Drs. Sanborn, Donley, Partridge and the secretary frame this matter so that it may be brought through the Publicity Committee to the public notice.

On motion of Dr. Skelton and after discussion by Drs. McCabe, Armington, Kelley, Hoye and Messenger it was voted that the chair appoint a committee of three to report to the next meeting on the need of a hospital for chronic diseases in this community.

The meeting adjourned at 10:15 p. m. Attendance, 56. Collation was served.

Respectfully submitted,

PETER PINEO CHASE, *Secretary*.

The regular monthly meeting of the Providence Medical Association was called to order by the President, Dr. Edward S. Brackett, Monday evening, February 6, 1928, at 8:45 o'clock. The records of the last meeting were read and approved.

After a few remarks by the President the first paper of the evening was read by Dr. Philip H. Mitchell, Professor of Physiology at Brown University, on "Internal Secretions of the Reproductive Organs." A new method has been evolved of studying the sex cycle of animals by examining vaginal smears. An ovarian hormone was first studied in this way. An extract from follicular liquid or human placenta put into a spayed rat were the most active in bringing on the sex cycle. Corpora lutea in primates were also strong in this hormone. The sex cycle of a monkey is much like that of a woman and all these phenomena can be produced here. The hormone is a growth promoter specific to sexual organs, stimulating the sex cycle, and when its use is stopped menstruation then takes place in the monkey. No commercial preparations have been found to have this hormone. At present it would be very expensive to use. No practical application of this has yet been evolved. The paper was discussed by Drs. Pitts, Perkins, Noyes, McCann and Mitchell.

The second paper of the evening was by Dr. Harry C. Messenger on "Cases of Hypertension Studied with the Aid of the Ophthalmoscope." He cited five cases to show that the retinal arteries showed the nature of arteries in other parts of the body, and detailed the retinal findings in relationship to phases of the disease. The paper was discussed by Drs. Fulton, George Mathews, McDonald, Mowry and Messenger. Dr. George A. Matteson presented a specimen of horse shoe kidney from the first surgical service at the Rhode Island Hospital. Dr. Raymond G. Bugbee presented a case of subtotal resection of the stomach with specimen.

The meeting adjourned at 10:40 P. M. Attendance 70.

Collation was served.

Respectfully submitted

PETER PINEO CHASE, *Secretary*

RHODE ISLAND MEDICO-LEGAL SOCIETY

The Regular Quarterly Meeting was held in the Medical Library Building, 106 Francis Street,

Providence, Thursday, January 26, 1928, at 5 P. M.

Program—"Horoscope of the United States, and General Forecast for 1928," by Mrs. Marian Tetreau, of Providence, R. I., Astrological Adviser and Psycho-Analysisist.

Following adjournment, a light supper was served.

CREIGHTON W. SKELTON, M.D., *President*

JACOB S. KELLEY, M.D., *Secretary*

WASHINGTON COUNTY MEDICAL SOCIETY

Following is a list of the officers of the Washington County Medical Society for the year 1928:

President—John Paul Jones, M.D.

First Vice-President—John W. Helfrich, M.D.

Second Vice-President—Charles P. Crandall, M.D.

Secretary and Treasurer—John Champlin, Jr., M.D.

Board of Censors—C. Grant Savage, M.D.; J. DeVere Barber, M.D.; John Champlin, M.D.

Delegate to the Rhode Island Medical Society for two years—F. E. Burke, M.D.

Councilor for two years—M. H. Scanlon, M.D.

Alternate Councilor—D. F. Marr, M.D.

Auditor—S. C. Webster, M.D.

P. J. Manning and A. F. MacDonald dropped from the roll of members of the Washington County Medical Society.

JOHN CHAMPLIN, JR., *Secretary*

PERSONALS

Dr. Louisa Paine Tingley of Boston, Mass., and Providence, R. I., has been reappointed Consultant in Ophthalmology on the Staff of the New England Deaconess Hospital, Boston, Mass., for the year 1928.

Dr. Tingley, Consultant in Ophthalmology on the Staff of the Massachusetts Women's Hospital, Boston, Mass., has furnished a room in the new Otis Wing of the hospital in memory of her husband, Frank Foster Tingley.



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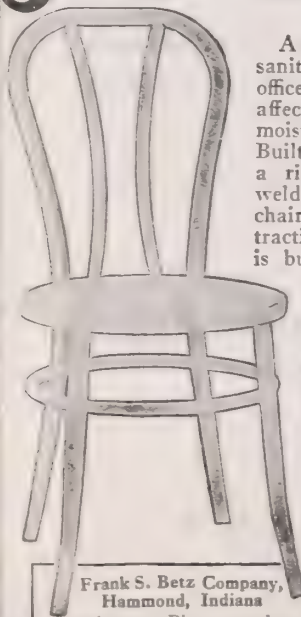
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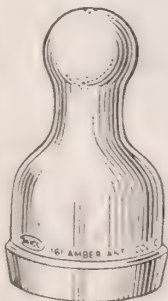
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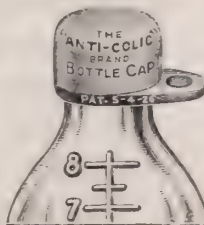


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Shellfish Sanitation. L. M. Fisher

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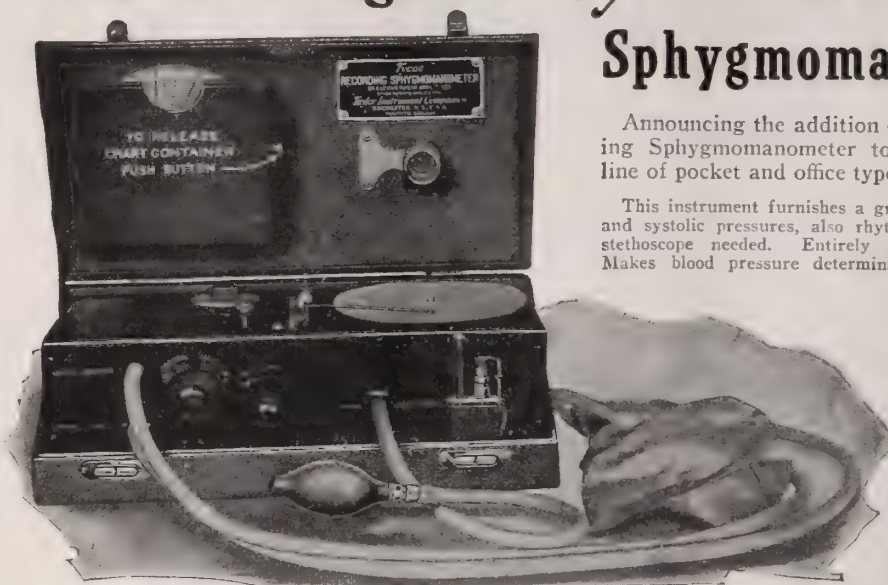
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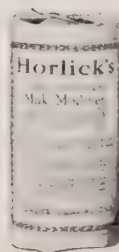
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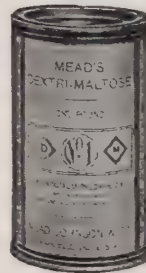
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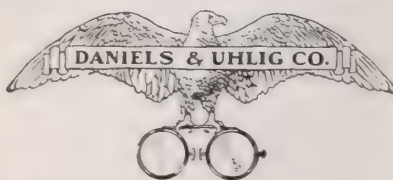
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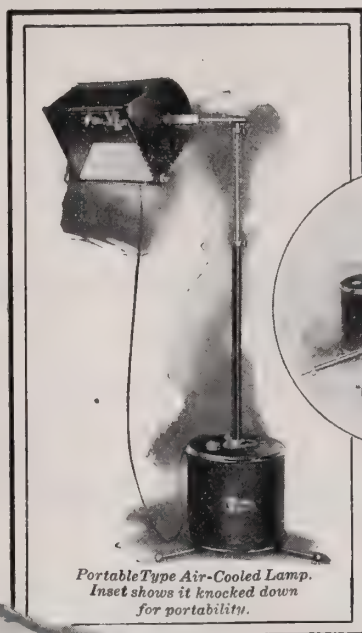
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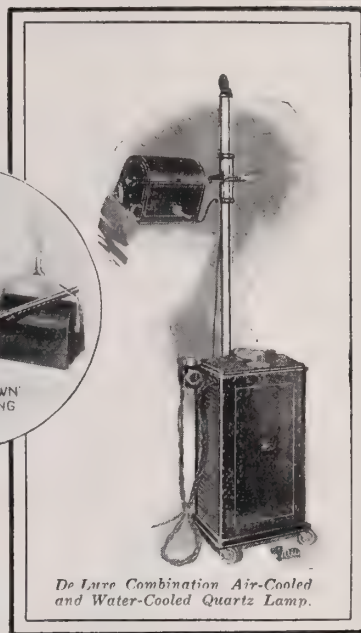
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ORIGINAL ARTICLES

THE AVOIDANCE OF RISK IN OPERATIONS*

JOHN W. KEEFE, M.D., F.A.C.S.
PROVIDENCE, R. I.

While the number of years that an individual has lived has an important bearing upon his ability to withstand an operative procedure, yet the most essential factor for the surgeon to consider is the condition or state of the various tissues of the body and their interrelations which keep the organism functioning normally.

Senility is a term used to imply mental or physical infirmities due to old age. When can a man be said to be old? Some men are old at fifty, while others may be strong and vigorous at eighty.

A man may be young in years, and yet we may find that his body tissues have so deteriorated that he may be said to be old.

The heart may be so impaired following an acute endocarditis that the life of the individual may be definitely shortened.

If we would adequately evaluate the capacity of the individual to withstand an operation, it is necessary that we have a careful and detailed history, not only of the life of the patient, but also of his ancestors. A syphilitic or tuberculous heredity may render dangerous a simple operative procedure.

The mental state and the temperament of the patient should be carefully considered, as the emotions play an important role in our lives. We are all familiar with the beneficial effects produced by the implicit confidence of the patient in the surgeon.

It is desirable that the anaesthetist should see the patient, preferably the day before the operation, in order that he may acquaint himself with the character and condition of the patient, the disease from which he suffers, and the type of

operation which is to be performed. Should he be a skillful and tactful anaesthetist, the patient will take the anaesthetic with a feeling of confidence, that he is among friends who will assiduously care for his safety. We are all familiar with the bearing these activities have in producing a calm, tranquil anæsthesia.

The tactful nurse may also make smooth the stony or rough path of the patient. The nurses, assistant surgeons and the surgeon himself should visit the patient each in turn and say something encouraging or do some act of kindness, to make the trying ordeal of an operation at least as free from anxiety as it is possible to be made.

A summary of all the information obtained by the examinations of the lungs, the heart, the nervous system, the abdominal viscera, the pelvis, the rectum, laboratory findings, X-ray data, and so forth, should be carefully considered by the surgeon before he makes his diagnosis and determines what shall be the surgical procedure, if any.

The quantity output of the automobile manufacturer which we read of in the daily prints is all very well for that business, but hardly for surgery. There are surgeons who seem desirous of performing as many operations as possible in a day; and in order to accomplish this feat, they relegate to assistants the examination of the patient, the laboratory work, and accept as final their diagnosis and advice as to the operation to be performed, and some assistants even perform a part of the operation, while the surgeon himself takes his first view of the patient as he lies anaesthetized upon the operating table. You have all seen egregious errors made by eminent surgeons operating under the conditions I have just described.

We should look upon human life as something sacred, and we believe that the surgeon who operates should be in command, and, consequently, responsible for the welfare of the patient, just as the captain of the ship is responsible for the lives of his passengers.

Is it too much to ask of the surgeon that he become acquainted with his patient before the operation, that he, too, examines the lungs, heart,

*Read before the Providence Medical Association, December 4, 1927.

abdomen, and that he, too, consults with the radiographer and examines the radiograms himself? These precautions would act as a check upon his subordinates, and would place him in a better position to form a more nearly correct diagnosis and thus to better outline the operation to be undertaken. Would not this lead to fewer errors and to the avoidance of unnecessary operations?

In the practice of surgery, the quality of the work is far more to be desired than the quantity.

What is known as surgical judgment is dependent upon very many factors. The first in importance is the character of the surgeon. Is he so bold and daring that the life of his patient is sacrificed by his boldness? Or is he so timid and vacillating that his patient dies while he is making up his mind just what to do? Does he perform unnecessary operations?

The surgeon should make a study of himself and learn just what are his limitations; so that he will not be tempted to prolong unduly an operation or to do several at one sitting, unless they can be done with safety to the patient. Many lives could be saved by dividing an operation into two or more stages.

There is too great a tendency today to tinker with the various abdominal viscera; some surgeons seem to feel that the ovary and the appendix may always be attacked with impunity; but remember, fatal results have followed these unnecessary onslaughts.

The aphorism that "A man is as old as his arteries" contains many truthful elements, as the normal circulation of the blood is a most important factor in the health of the individual.

Sclerosis of the blood vessels, by impairing the blood supply to the tissues, interferes with the capacity to function of many important organs, such as the brain, heart, kidney, liver and so forth.

Should we not consider the human body as a whole, a single entity, with a complex mechanism and as an organism, with a moving equilibrium which, when working in harmony, we call health. A departure from this delicately poised state of equilibrium results in a loss of health, or disease.

If this be so, is it not desirable that the surgeon familiarize himself with the entire mechanism of the patient who may have several organs diseased at the same time. How unnecessary to remove a carcinoma of the breast, when a radiogram would show metastases in the bones of the pelvis?

We are living in an era in medicine when the specialists bid fair to outnumber the general practitioners whose labors consist in considering man as a whole, a single entity.

Many of our specialists today have become so by the short route, say a six weeks post-graduate course in some specialty. Just consider for a moment the character of the work their patients receive.

We all realize that specialization restricts a man's outlook and tends to focus his attention on the particular part of the body which comes within the range of his specialty.

A specialist who takes up the intensive study of some organ of the body, after he has practiced medicine for several years, comes to his work with a mature mind, and it is these men who in the past have advanced our knowledge of the various specialties.

Every specialist should first study his patient as he would if he were a general practitioner and then employ all of the skill which he has acquired in his specialty.

Patients with valvular disease of the heart, where there is no decompensation, withstand operations well. I believe that ether properly administered acts as a stimulant rather than a depressant. An intermittent pulse may be found for years with some persons and it is not a contraindication for operation. Rest in bed, with suitable doses of digitalis, may be of decided value and may place the patient in a condition to withstand even a severe operation.

A patient suffering from diabetes may be greatly improved by a proper diet and the administration of insulin.

Many patients suffering from complications arising from a diseased prostate, with the aid of rest in bed, forced fluids and digitalis, may be so improved as to withstand a suprapubic operation with a local anaesthetic. It is remarkable how rapidly some of these patients improve, so that they bear well the later operation for the removal of the prostate.

The interval between these two operations may be prolonged with profit to the patient for a week or even months. One is surprised to see the reduction in the size of the prostate by adequate drainage of the urinary bladder. Attention to the diet and to the gastro-intestinal tract, in one who

has neglected these important functions will materially increase the resistance of the patient.

I would emphasize the desirability of devoting more time to the preliminary study of our patients and by applying many of the known methods for improving their physical condition, render an operation safer and thus insure a more speedy and uncomplicated recovery.

Local anaesthesia should be more frequently employed than is the practice today. Many operations can be performed with greater safety and less disturbance than with a general anaesthetic.

The danger of leaving foreign bodies, usually gauze sponges or instruments, in the cavities of the body is ever present and often proves to be of great annoyance and worry to the surgeon. There are over three hundred and twenty-five cases reported of foreign bodies left in the abdominal cavity following operations, and many sponges must have been left without the surgeon ever realizing his error. Also many known instances have not been reported. An analysis of these shows that the surgeon was under some special stress, usually due to the patient having had a severe hemorrhage. While operating under great tension sponges may be easily overlooked by the surgeon.

I had a personal experience many years ago that made a profound impression upon me. We had been so imbued with the possibility of leaving a sponge in the abdominal cavity, that we made the following plans to avoid this accident. Gauze sponges of three different sizes, twelve of each, were placed in packages. At this time we had an unusually intelligent and reliable Sister in charge of the operating room. I had asked her to take entire responsibility for the sponges, during the operation, and to inform us at the close whether any sponges were missing. She was requested to do nothing else about the operating room in order that she might keep her mind solely occupied with the sponges.

Having taken these precautions, we felt at ease about the sponge question, especially on account of the remarkably alert and conscientious Sister. I had removed a small ovarian cyst and just before closing the abdominal wound, I asked for the sponge count. The Sister assured me that they were all accounted for. When the wound was half closed by suture, the anaesthetist allowed the patient to come partially out from under the influence

of the anaesthetic. A portion of the ileum protruded through the wound, this was replaced, and a square gauze sponge six inches by six was asked for and placed beneath the wound and over the intestine to hold the same in place. I continued to close the wound, with the intention of recovering the sponge, before the incision was entirely closed. Yet I continued to suture the wound, leaving the sponge in the abdominal cavity. I did not again call for the sponge count, and neither the Sister responsible for the sponges, the two physicians who assisted me at the operation, nor I thought of that sponge. The sponge count having been previously asked for and found correct evidently had made a deep impression upon each one of us. So much so that we forgot to ask for a second count.

Upon visiting the patient the next day, I noticed the temperature and pulse were slightly above normal, more particularly the pulse. The Sister who took care of the abdominal cases was especially efficient and she also had been present at the operation. I said, "The patient does not look well," which at that period was unusual following that type of operation.

I then recalled in detail the various steps of the operation, even to placing that last sponge in the abdominal cavity, and I then realized that I had not removed it. I sent for the Sister who had the care of the sponges and told her the patient upon whom we had operated the day before was not doing well, and asked her if she could think of any reason why. The Sister said, "Didn't you leave that last sponge in the abdominal cavity?" I then said, "That is exactly what I did." I telephoned Dr. William R. McGuirk, who had assisted me, and said to him, "That patient we operated upon yesterday is not doing well," and asked him what he thought was the cause. He said, "Didn't you leave that last sponge in the abdominal cavity?"

It was a remarkable psychic phenomenon that each of us upon reflection was immediately able to recall the picture of that sponge placed in the abdominal cavity and not removed. I requested Dr. McGuirk to come at once to the hospital. The patient was anaesthetized, the wound opened, and the sponge lying just beneath the wound was removed. I was much impressed with the fact that I found considerable lymph upon the coils of the ileum and the parietal peritoneum, in the vicinity of the wound, showing that the sterile sponge had pro-

duced sufficient irritation to cause peritonitis, thus convincing me that gauze sponges traumatize the peritoneum, and I believe, in some instances, may cause the death of the patient. The wound was closed and I am happy to relate that the patient made a good recovery.

This instance occurred more than twenty years ago and since then I have operated without relying upon anyone to make a sponge count. Instead of using a gauze sponge to wall off the abdominal viscera, I have used a roll of sheet rubber, twelve feet long and eight inches wide, about the thickness of the sheet rubber used by dentists. When the abdominal cavity is opened folds of this rubber are tucked in the wound, walling off the intestine from the site of the operative field. A part of the rubber roll lies outside of the abdominal cavity as the entire roll is never placed wholly within the abdomen. The edges of the wound may be covered by part of the rubber roll, thus protecting them from infection and trauma from the use of retractors.

It is of equal service whether we are operating in the pelvis, on the uterus, tubes or ovaries, or whether we are excising a gall bladder or doing a gastroenterostomy.

The work of Henderson and other observers has shown us that rubber is less irritating to the intestine than gauze. I believe the use of the rubber roll to protect the intestine undoubtedly lessens the shock attending an operation, and I am convinced that we have fewer adhesions following an operation.

The ease of sterilization of the rubber roll is important. We can as readily sterilize this roll as we can our rubber gloves, and the same roll can be used many times. I have known them to last for more than a year. After an operation, the rubber is washed and while unrolled it is boiled for twenty minutes. It is then dried, powdered, and rolled into a bandage. Previous to operating it is again unrolled and then sterilized by boiling for twenty minutes. It is then rolled and placed in a hot saline solution.

A towel is folded so as to make a pocket, into which the roll of rubber is placed, and the pocket is then clamped to the sterile operating sheet near the wound. During the operation as much or as little of this rubber roll can be unwound, walling off the intestine and thus protecting the operative field.

Gauze sponges eighteen inches long and three inches wide made of several thicknesses of gauze are used to wipe dry the field of operation. These sponges, however, are never allowed to remain wholly within the abdominal cavity.

It will be noted that few sponges are needed in any operation when the rubber roll is used, and that it is no longer necessary for us to place sponges entirely within the abdominal cavity. The use of the rubber roll prevents the loss of the carbon dioxide content of the blood, and thereby lessens shock. It is moist and smooth and does not injure the peritoneum, thus preventing post-operative adhesions.

When gauze is employed to wall off the abdominal viscera, the friction that results from the gauze rubbing against the intestine, with every inspiration and consequent motion of the diaphragm, must of necessity injure the delicate peritoneal covering of the bowel and produces a continuous flow of irritating impulses, conducted through afferent nerves to the brain. There can be no question that this trauma is a factor in the production of shock and the cause of peritonitis.

The advantages of the use of the rubber roll for walling off purposes are well borne out by the valuable experimental studies of Yandell Henderson of Yale dealing with the carbon dioxide content of the blood and its relations to shock.

His experiments and deductions are of great practical value to us as surgeons. He states "that from excessive pulmonary ventilation, reflexly induced by laying open the abdomen, or indeed, by any surgical operation, there results a diminution of the carbon dioxide content of the arterial blood." This is known as acapnia.

When the viscera are exposed to the air, exhalation of carbon dioxide occurs, and the local acapnia which results is a factor in the peripheral inhibition.

General acapnia from the hypernea and local acapnia from exposure are the initial causes of surgical shock following laparotomy.

Cloths moistened in warm saline solution and frequently changed produce local acapnia. When acapnia is prevented the forms of motility of the gastrointestinal canal are practically identical with those shown by roentgenograms of unoperated animals.

He caused to pass over the exposed viscera a gentle current of normal moist air, and found that

this treatment is a highly effective procedure in the production of shock.

In another experiment one loop of intestine was laid in cotton wool and left untouched by the hand during twenty minutes of warm moist aeration, while a control loop was wrapped in sheet rubber to protect it from the air, and was handled continuously for this period. Both became congested, but the former underwent by far the greater loss of tonus and motility. The carbon dioxide content of the animal's blood was then increased, and the exposed loop recovered its tonus and motility.

He thus demonstrates the value of sheet rubber as a covering for the intestines during operations, as it reduces acapnia and lessens shock.

Crile says that "When the omentum is made to cover the viscera there is much less shock." When the abdomen is opened peristalsis ceases.

Henderson found that aeration of the viscera of a bulldog for three hours lowered the arterial pressure 50%. The small intestines changed color from pink to dark purple; then 200 cc. of Ringer's solution were slowly injected into the femoral vein.

This fluid while cold had been shaken thoroughly in a flask, through which carbon dioxide was bubbled, and then had been warmed to 35 C.

Ringer's solution saturated with carbon dioxide was introduced into the peritoneal cavity and a stream of carbon dioxide gas was bubbled through this liquid from a tube inserted deep among the viscera.

At the end of twenty minutes the animal had come out of coma, arterial pressure had risen considerably and the pulse was of nearly normal appearance and tonus.

Local acapnia due to direct exhalation of carbon dioxide is a factor in the loss of tonus in exposed viscera. Exposing the viscera to a current of air at body temperature saturated with moisture rapidly induces congestion and loss of tonus and motility.

Restoration of the body's store of carbon dioxide is effective as a method of relief from all except the extreme stages of acapnia shock.

If the conclusions of Henderson are correct, we should no longer cover the exposed intestine with warm moist towels or gauze. Sheet rubber is far preferable. Should it be found necessary temporarily to remove loops of intestine from the abdomen, a rubber bag may be fastened to the sterile

sheet near the wound, and the intestines placed in this bag.

Many surgeons located in different parts of the country have written and spoken to me of the value of the rubber roll in their practice of surgery.

Dr. William T. Porter of Harvard, whose heroism in making a study of shock in the shell-torn districts of France calls forth our profound admiration, has also proved that increasing the carbon dioxide content of the blood of wounded soldiers in a state of shock results in a gradual return to normal. The application of this principle will undoubtedly be the means of saving many lives.

Having used the rubber roll for more than twenty years, I am convinced that it lessens shock, fewer adhesions form, and it lessens the danger of leaving sponges in the abdominal cavity.

CONCLUSIONS.

Local anaesthesia should be employed when possible, especially when operating upon the aged.

Age alone adds little to the risk of an operation.

Diseased tissues may contraindicate operation.

Impairment of organs or tissues may be improved by a suitable study of the conditions and the intelligent application of drugs and hygienic measures.

The rubber roll in place of gauze sponges for walling off the abdominal viscera.

A greater length of time than is customary should be devoted to the study of the patient before the operation.

Let us by all means avoid operations on the old or infirm unless they are life saving.

Life is sacred. Remember the Golden Rule.

SHELLFISH SANITATION*

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IMPORTANCE OF SHELLFISH AS A FOOD

There is evidence that from the earliest times shellfish have been an important source of food for primitive man. Breasted¹ described the shell

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mounds of prehistoric Denmark, and finds evidence that man in the late stone age drew much of his sustenance from the sea. In these shell mounds, which extend for miles along the sand dunes, are found intermingled shells, animal bones, evidences of camp fires and stone tools and implements.

In America, similar mounds are found up and down the Atlantic coast, though perhaps not of as great antiquity. Some weeks ago the writer casually examined some very extensive mounds along the banks of the Sheepscott River in Maine. Some of the mounds are fifty feet high and covered with trees. They occur at intervals on both sides of the river for a distance of a half mile or more. It is reported² that bones of animals and stone implements and tools have been found there. According to local tradition, human remains have been taken from these shell mounds. One authority² reports the finding of human bones in similar mounds in Massachusetts.

Shellfish have played an important part as food in New England from the earliest times. It is recorded³ that in that first severe winter the Pilgrims spent at Plymouth there were times when there was nothing to eat but shellfish. Elder Brewster, when he sat down to such a meal, returned thanks that they "were permitted to suck of the abundance of the seas and of the treasures hid in the sands."

To this day shellfish are much esteemed in New England. At many resort places along the coast they furnish the chief attraction to vacationists. At one such place in Rhode Island alone it is not unusual in a single day for 3,000 to 5,000 persons to partake of shore dinners containing shellfish in generous portions. Many of these folk come from points outside the State, and even from outside New England.

Elsewhere a similar fondness for shellfish exists. People living in interior cities from the Atlantic coast to the Pacific, and even in foreign countries, enjoy American shellfish, shipped to them either shucked or in the shell. A product so extensively used affords an opportunity for gaining a livelihood to thousands of people. According to the Bureau of Fisheries,⁴ the number of people employed in the oyster industry in the United States is about 67,000, and the value of the product is over \$14,000,000 annually. In quantity, it amounts to 73,000 tons of food, an

equivalent to 254,000 dressed steers, and supply 300,000,000 meals each year.

Shellfish are rich in iodine and in vitamins.⁵ One pound of oysters will furnish 7 per cent. of the energy a man needs daily, 28 per cent. of the protein, 35 per cent. of the calcium, 53 per cent. of the phosphorus, and 13.6 per cent. of the iron. Their composition is such as to make them more nearly self sufficient as a diet than most foods. In this respect they resemble milk, and need but the ordinary ingredients used in cooking starches and fats to give them "balance." Jones⁶ states that they contain 200 times as much iron as eggs, and are rich in vitamins A, B and C. This suggests the possibility of use in the prevention of dietary deficiency diseases.

BIOLOGY AND LIFE HISTORY

This discussion refers principally to oysters, quahaugs or hard clams, and soft clams, since efforts at sanitation are directed principally toward these forms. Oysters and clams belong to the group Lamellibranchae of the mollusk sub-kingdom. They possess a pair of valves or shells composed principally of lime. Their methods of obtaining food and their reproductive processes are somewhat similar in all three species, and are of much interest and importance to the sanitarian and the culturist.

Possessing very limited powers of locomotion, or possessing such powers only during a portion of their lives, they cannot go in search of food, but must depend chiefly upon currents of water to bring it to them. Their food consists largely of microscopic forms of plant and animal life. Small crustaceans, larvae of mollusks and crustaceans, protozoa, rotifers, bacteria, etc., constitute a part of the food supply. Other things being equal, shellfish will thrive better on beds swept by strong tidal currents than they will in areas of quiet water. Shallow bays and coves of salt water receiving the discharge from fresh water streams, carrying quantities of organic life forms, are more desirable to the oyster culturist than areas exposed to the open ocean, where currents are slow, and into which no fresh water streams discharge. The nature of the bottom, whether hard and clean or muddy and soft, or of shifting sand, also has an important bearing on the desirability of a given area. The growth of shellfish depends upon temperature very largely, also, more growth occurring

in the warm summer seasons than in the winter time. The life processes are slowed up to such an extent in some forms in cold weather as to resemble a state of hibernation. In the active feeding season, according to Golstoft,⁸ an average oyster will strain the food from 40 to 50 liters of water a day, and will feed during 20 of the 24 hours. In cold weather the oyster may remain inactive for days at a time. Quahaugs and soft shelled clams are said to burrow into the mud and sand during cold weather to escape low temperatures.

REPRODUCTION

The American oyster (*Ostrea Virginica*) is⁷ unisexual, whereas the European oyster (*Ostrea Edulis*) is hermaphroditic, i. e., both sexes occur in the same animal. Some hermaphroditic species are also reported on the Atlantic coast.⁹

The eggs are ejected by the female into the water, where they are fertilized by the spermatozoa similarly ejected by the male. The resulting larvae, microscopic in size, possess the ability to swim about. After a week or ten days, the larva "strikes" or "sets," and for the rest of its life it remains sedentary. Oysters remain attached to the object on which they "set," e. g., shell, rock, piles, or other hard objects, unless forcibly removed. Clams, both hard and soft, burrow into the mud or sand near where they "set," and remain within a few feet of the spot thereafter.

CULTURE

The cultivation of oysters has been practiced for many years. It is perhaps most highly developed in France. With the exhaustion of the natural beds, attempts at cultivation began. In America, natural beds occurred all along the Atlantic coast from Maine to Texas. At present, there is none of commercial importance north of Cape Cod. Inability to obtain an abundant natural "set" is the continuous concern of oyster growers. Most of the oysters marketed from New England probably have their beginning as seed oysters in Connecticut. It has been over ten years since a satisfactory natural "set" has occurred in Narragansett Bay.

The ground on which seed oysters are to be raised is first carefully cleaned. Large mature oysters known as "spawners" are placed on or near the bed to provide the "spat." About the time of spawning, clean shells, gravel or other

materials are scattered over the beds to provide a place on which the young free swimming larvæ can "strike" or "set." After the set is obtained, it may be necessary to protect it from destruction by shifting sands, storms or other contingencies to remove it to growing or maturing grounds. There are certain critical temperatures below which spawning and setting apparently do not readily occur. For New England waters, this temperature is approximately 70 degrees.⁷ Since the water attains this temperature for only a short period during the summer, the spawning season necessarily is very short. When the summer is unusually cold, as the past one has been, a set can be expected only in the most favorable places. Seed oysters transplanted to other areas remain down varying lengths of time before being marketed. In some instances, two-year old seed may be laid down in a different body of water for a period of two or three years to acquire the necessary growth and flavor desirable. In other instances, this period of time may be shortened to a few weeks or months. During this time it may be necessary to fight the natural enemies of the oyster, such as star fish and drills, often at considerable expense. The grower may also have to employ watchmen and patrols to keep poachers off the beds.

In stormy, wintry weather, it may not be possible to take oysters from the maturing grounds at times when the demand for them arises. To meet this situation, oysters, quahaugs and clams, at the beginning of the season, are sometimes removed to more accessible and better protected beds, or even into floats near shore. Until recently it was the custom in some sections of the country to "plump" or "fatten" oysters by taking advantage of the phenomenon of osmosis. If shellfish grown in waters of the approximate salinity of sea water are laid down in water having a lower salt content, such as fresh water, osmosis takes place, the fresh water penetrating the tissues of the shellfish, and so diluting the shellfish with water. As much as twenty to thirty per cent. of water can be added in this way. If it happens, however, that the fresh water is contaminated with sewage, as so often is the case along the water front near towns and cities, disaster may follow.

The storage of oysters under water after they have been removed from their growing beds is

regarded by some growers who ship oysters in the shell exclusively, as a conditioning process essential to develop their maximum keeping qualities. In this conditioning process, the shellfish are placed in water of the same salt content as that over the growing beds, so that plumping or bloating does not occur. Many are placed in a comparatively small quantity of water in concrete tanks. The oysters feed actively, and probably use up promptly what little food is in the water. They continue to "drink," and thus flush out of the intestinal tract accumulated waste material which might otherwise become a focus of infection resulting in the early disintegration of the bivalve. It is said that the oyster meats actually lose five to ten per cent. in weight during this process, but that they stand shipment for long distances much better.

In order to prevent contamination during this conditioning process, it is necessary that the water used be of a high bacterial quality, practically of drinking water standard. This is accomplished in some cases by treating the water admitted to the tanks with chlorine.

MARKETING

In most States, the oyster season coincides with the colder months of the year. It so happens that the names of these months contain the letter "R." In this way the average man remembers when he can eat oysters. The difficulties of shipping during the warmer months, and also the fact that the oysters are spawning then, have contributed to maintaining a "season" for oysters. In some States the season is fixed by law, in others merely by custom.

Shellfish are marketed either in the shell or shucked, and in either condition are shipped long distances. Shell oysters are kept alive until consumed. This is accomplished by keeping them on ice or at low temperatures. Shucked oysters are likewise kept from spoiling by shipping them at low temperatures. The shucked shellfish are washed to free them from grit, pieces of shell, mud, etc. In modern shucking houses this is accomplished in a machine known as a "blower," in which air is blown up through the mass of shellfish and water contained in a metal tank, thus agitating the contents sufficiently to remove the undesirable matter, e. g., shells, mud, sand, mucus, etc. Osmosis takes place rapidly during this pro-

cess, and if the washing is continued too long, a considerable quantity of water may be added to the product.

Care must be taken that only normal, healthy persons are employed in shucking houses, since they are engaged in handling a food product that is often consumed raw, and the utmost cleanliness should be enforced. Carriers of typhoid fever and other intestinal diseases should be excluded. The spread of disease has been ascribed to infection introduced in this way.¹⁰

In one New England State¹¹ where the routine examination of shuckers involves the examination of stools and urine to discover typhoid fever, nearly two per cent. of those examined had to be excluded from the handling of shellfish because the examinations disclosed the presence of typhoid fever organisms in their body discharges.

The container in which the shucked product is shipped should be plainly labeled with an identification number, and it should be effectively sealed so that tempering can be easily detected, in order that both the purchaser and shipper may be protected, and the responsibility for the presence of an unsatisfactory product on the market may be readily fixed.

POLLUTION

From time immemorial, cities and towns located on the sea or near it or on large bodies of fresh water have disposed of their liquid wastes by methods of dilution, and, on the whole, the method has been reasonably satisfactory, particularly from the standpoint of the city so disposing of its wastes. Sooner or later, however, particularly if the city grows, trouble arises. The pollution may become a nuisance along the water front, so that the property owners and the shipping interests protest. It may prevent the use of adjacent bathing beaches; its unsightliness may offend the æsthetic sense of the citizens; it may contaminate the city's own water supply, or that of nearby cities, as has happened in the case of some of our cities on the Great Lakes; and, which is more to the point in this connection, it may interfere with the culture of shellfish and become a method by which disease may be spread among shellfish consumers.

While the various factors which have operated to prevent the recurrence of a natural set in former good shellfish areas are not well understood,

it is generally believed that the increasing pollution of our streams, both with domestic sewage and trade wastes, has contributed largely to the disappearance of the industry in certain localities. Some growing areas have become so badly polluted with sewage that the decomposing organic matter has utilized all the dissolved oxygen in the water, leaving none to support shellfish life.¹² The presence of dilute acids or other chemical substances from various industrial processes may have an inimical effect, if not upon the adult shellfish themselves, at least upon the tender larvae in the velige stage which occurs about 36 hours after the fertilization of the egg.

The sanitary significance of pollution is, however, of greater interest to those charged with protecting and conserving the public health than is the biological significance.

Various investigators¹³ have shown that the common sewage microorganisms, as represented by the *B. coli* group, are not normally present in the intestinal tracts nor in the shell liquor of the shellfish grown in uncontaminated waters. Therefore, much the same methods are employed to test the safety of shellfish as are employed in testing the safety of drinking water. The procedure¹⁴ recommended by a committee appointed by the American Public Health Association to formulate a standard method for examining shellfish is generally followed in the various laboratories that examine shellfish.

Since absolutely uncontaminated water is not to be found near our coasts, much time and effort is devoted to ascertaining the degree of contamination that occurs over the various shellfish beds at various times, as influenced by conditions of tide, current and wind. The length of time that it takes for pollution to reach the growing area is also taken into consideration, since recent pollution is more dangerous than old pollution. This is so because disease producing organisms in water, whether fresh or salt, are not in their natural habitat, and, fortunately, do not multiply and increase, but, on the other hand, die out completely with the elapse of sufficient time. If it were not for this self purification process which nature has provided, death rates from water borne diseases would very materially exceed those of the present time.

In addition to this, there would be very few safe shellfish growing areas within a reasonable

distance of our markets. On the other hand, it must not be assumed that, merely because slowly moving water tends to purify itself, the danger can be completely ignored. There is a very real and somewhat insidious danger. Studies of tides and currents, quantities of sewage and quantities of diluting water and numerous bacteriological examinations of water and shellfish need to be made in order that even an approximate appraisal of the relative degree of danger may be obtained.

RELAYING

Shellfish that have become contaminated on their natural growing grounds with sewage laden waters need not necessarily become a total loss to the oyster grower. It has been shown¹⁵ that if such shellfish are relaid to clean waters, they will, in the course of a relatively short time during their active feeding season, cleanse themselves of the pollution they have accumulated. This fact is of considerable importance to the industry. When the expense of relaying to clean waters is not excessive, and it frequently is not, shellfish which would otherwise have to be condemned can be reclaimed. This applies particularly to oysters. This procedure appears to be less valuable in the case of both hard and soft clams, principally, perhaps, because of the fact that both varieties of clams burrow into the mud and sand. Less experimentation appears to have been made with clams than with oysters, because they are less extensively used. In some attempts at relaying soft clams, considerable mortality resulted because of breakage in handling. Then, too, the same degree of purification did not appear to take place.¹⁶ In some instances the relayed clams did not burrow into the sand, and many died. It would be of great economic value to New England if a practicable method of reclaiming soft clams from polluted areas could be perfected. At the same time, it would simplify policing of closed areas in which shellfish soon become abundant. The Legislature of Massachusetts last year appropriated a sum of money to conduct experiments along these lines, and the Massachusetts State Health Department is now engaged in carrying out such studies. Some prolific hard clam growing areas in New England have also had to be closed because of sewage pollution. If a practicable method of reclaiming them could be discovered, it would be a boon to some sections of the coast at least.

The leaders in the industry would do well to see that funds for the necessary studies and investigations are provided. Some changes in State law would have to be made to permit the relaying of hard clams from closed areas, and it would no doubt be found necessary to lease suitable grounds to individuals to provide the necessary incentive. It has been found profitable to relay hard clams of the "little neck" size, or smaller, to areas where two or more years of growth can be added. The increase in bulk in this time is said to amount to four or five fold. It is reported that undersized hard clams surreptitiously shipped to the New York market from one of the New England States were bought by one of the Long Island shellfish dealers, relaid in Long Island waters, and after three or four years, marketed at a handsome profit.

WATER STORAGE AND CHLORINATION

Because of the dangers attendant upon the floating of oysters in small creeks or in cribs and floats near shore, the practice is prohibited in most states now. Some shippers, particularly on Long Island, who have desired to have a quantity of shellfish on hand for immediate shipment, have lately begun to store oysters in specially constructed concrete tanks ashore. Water from the Sound is pumped into the tanks and chlorinated so as to bring it up to the drinking water standard. The New York State Health Department regulations require that oysters stored under water or floated shall be stored or floated only in water of drinking water standard. After several hours, the water is drawn off and the tank refilled with more chlorinated water. The oysters "drink" quite actively, and a change in water is necessary to keep them in proper condition.

At various times attempts have been made in the laboratory to chlorinate contaminated oysters, and thus make them suitable for market purposes. Essentially, this is merely a modification of the relaying process employed in the case of oysters grown in contaminated areas and relayed to clean waters where they can purify themselves. Oysters will not actively drink water containing much free chlorine. The chlorine appears to be an irritant to the oyster, which closes up and does not drink any more than necessary to satisfy its oxygen requirements. Some recent studies, made this past summer by observers under the direction of Dr. Galstoff of the Bureau of Fisheries at Woods

Hole, seem to indicate that after several weeks the oysters develop a tolerance for free chlorine to which they would not accommodate themselves at first.

The chlorination of oysters seems to hold some possibilities of usefulness to the industry. Whether it will ever be advisable to permit oysters from grossly polluted areas to be processed by means of chlorine so that they may be marketed is, at present, doubtful. Such a procedure could be compared to the pasteurization of dirty milk, a practice discouraged by all sanitarians. If it can be applied to oysters from only moderately polluted areas, it will, nevertheless, call for very close supervision by health authorities and careful control of every step by laboratory procedure.

SHELLFISH AND DISEASE

Many of the States now have well organized health departments in which competent epidemiologists are found. The same statement is true of many of our larger cities. So that whenever a considerable number of cases of typhoid fever occur, the cause of most of them is reasonable certain to be located. When only a small number of cases occur, or when they are widely scattered throughout the country, it becomes much more difficult to fix the responsibility for the occurrence of the disease.

At various times in the past, both in this country and abroad, there have been "scares" about the safety of shellfish as a food supply. At such times the consumption of shellfish has fallen off greatly. At times the public so completely lost confidence that a good deal of hardship resulted in the industry. The most recent example of this occurred during the winter of 1924-1925, following the occurrence of typhoid fever in New York City, Washington, Chicago and other cities, ascribed by the health authorities to contaminated shellfish.¹⁷ As a result of the conditions arising because of this, the Surgeon General of the U. S. Public Health Service was asked to call a conference in Washington of representatives of the shellfish industry, of the health authorities and various state and federal officials interested in preventing a recurrence of the situation then existing. At this conference, a committee was appointed to formulate recommendations for the sanitary control of the shellfish industry. The work of the committee was divided among subcommittees to consider the various phases of the

problems before it. These sub-committees reported back to the main committee, and a preliminary report was submitted in the fall of 1925.¹⁸ This report was practically made the basis of the Public Health Service policy with respect to the shellfish industry.

Following the recommendations of this committee, the various State agencies have established control over the industry within their respective jurisdictions. They issue certifications to various shippers of shellfish who meet the requirements with respect to the areas from which shellfish are taken and with respect to the methods of handling and packing shellfish products.

These certificates are then submitted to the Public Health Service representative in the district in which the State is located, and if approved, the name of the shipper is included in a list which is sent to the various health authorities throughout the United States and to the Ministry of Health of Canada for their information.

The shellfish shipper ships his product to market in containers labeled with a number assigned him by the State authorities. In this way health authorities in shellfish consuming states can readily ascertain whether or not shellfish reaching their markets come from shippers certified by their state authorities and approved by the Public Health Service. There is brought about in this way a uniformity of procedure throughout the industry in that the same requirements are exacted everywhere.

The fundamental scientific principles enunciated in the Advisory Committee's Report determine largely the policies adopted by the States and approved by the Public Health Service with reference to the shellfish industry. Before the engineer in charge of the shellfish district in which the State is located recommends Public Health Service approval of a particular State certification submitted to him by the proper State authorities, he assures himself of the adequacy and efficiency of the State machinery which issues the certification. If, in his opinion, State supervision is adequate and efficient, and, if from personal knowledge gathered at first hand in the field, he feels that the certification should be listed among those approved by the Public Health Service, recommendation is made to that effect.

Twice a month the Public Health Service issues a list of shippers whose certifications have been approved. This list is sent to State and municipal health authorities in the United States, and to Canadian health officials.

As long as a reasonable amount of care is exercised, first by the State authorities in issuing the certification, and, second, by the Public Health Service representative in recommending approval of State certifications, and, third, by the State or local health authorities in excluding from their respective markets shellfish shipped by uncertified

shippers, a repetition of oyster-borne typhoid fever infection on as extensive scales as occurred in the past should not occur.

This new responsibility, namely, that of preventing an unsafe food product in the form of shellfish from reaching the consumer, is thus added to the numerous other activities of health officials. A very large proportion of this responsibility rests upon the city health officer, for unless uncertified shellfish are excluded from his city markets, the whole protection it was intended to place around the shellfish consumer is swept away.

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¹⁹Wyman, J. An account of some of the shell heaps in Maine and Massachusetts. *Amer. Naturalist* (Salem), 1, 561-584; 1868.

²⁰Eggleston, Edward. A history of the U. S. and its people, 398 pp. D. Appleton & Co., N. Y., 1888, p. 37.

²¹U. S. Bureau of Fisheries, Statistical Bulletin, No. 648.

²²U. S. Bureau of Fisheries, Economic Circular, No. 58.

²³Jones, D. B. Nutritional value of oysters and other sea food. *Jour. Am. Public Health Asso.*, Dec., 1926, 16; 1177; 82.

²⁴Belding, David L. A report upon the quahaug and oyster fisheries of Massachusetts. Wright & Potter Printing Co., State Printers, Boston, Mass., 1912.

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³¹Rpt. of Committee on Standard Methods for the Bacteriological Examination of Shellfish. *Am. Jour. Pub. Health*, July, 1922.

³²Shellfish and the bacilli of typhoid. A note on E. Klein's investigation, for the Fishmonger's Co., of the time required by oysters to clean themselves of bacilli. *Br. Food Jour.* 7 (1905) 48. Experiments and observations on the vitality of the bacillus of typhoid fever and of sewage microbes in oysters and other shellfish (Review). *Lancet* 2 (1905) 1113-1114. Foot, Chas. J., Rpt. of Conn. St. B. of H., 1895, p. 189. Phelps, E. B. (1911), Some experiments upon the removal of oysters from polluted to unpolluted waters, *Jour. A. P. H. S.*, 1: 305, etc.

³³Unpublished reports, Mass. State Dept. of Health.

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³⁵Report of the Committee on the Sanitary Control of the Shellfish Industry in the United States Supplement No. 53 to the Public Health Reports, Nov. 6, 1925.

THE RHODE ISLAND MEDICAL JOURNAL

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R. I. Ophthalmological and Otolgical Society—2d Thursday—October, December, February, April and Annual at call of President. Dr. Francis B. Sargent, President; Dr. Joseph E. Raia, Secretary-Treasurer.
The R. I. Medico-Legal Society—Last Thursday—January, April, June and October. Dr. Creighton W. Skelton, President; Dr. Jacob S. Kelley, Secretary-Treasurer.

EDITORIALS

OF DOGS

Now very much in evidence. Every little while the rabies scare turns up, and when it has passed, one seeks to learn how many cases of real rabies there were, how many children were bitten, how many of them contracted disease, how many dogs were bitten, etc., etc. It is very difficult, indeed, to learn these facts, even by an interested and studious reader. It is brought to light, however, that there is a very varied attitude of people

toward dogs, and that many people are more favorable toward dogs than they are toward their fellow men and the health officers. There seems to be substantial propaganda to glorify the canine species, and much that is misleading and untrue is constantly being published in the lay press. That barking dogs are a nuisance to nervous people cannot be disputed, nor can it be gainsaid that any imputation as to the desirability of aforesaid pups is resented by any complainant. The laws regarding dogs are not enforced by those whose duty requires it. Sleep is as necessary to health as is food, and we note with interest and pleasure that

there is a rapidly growing movement for less noise in large cities. But one thing that has never been properly advertised is that nearly all dogs are filthy in their habits, eat manure and offal, etc., etc. Yet it has been urged that it is a good thing to have pet animals for children. If this is in order to teach children to be kind to animals, then we must say that there is something wrong with our domestic pedagogy. It has never been proven that any of the infectious diseases of children are due to animal osculations, but it is not unreasonable, and we venture to predict that the time may come when we shall acknowledge that we were wrong, and that, even rabies aside, dilutions of polymorphous filth are not suitable for infantile consumption.

A REAL NEED

From whatever angle one wishes to attack the treatment of mild or incipient mental disorders, it is obvious that there should be a place to do it. Most of such conditions do not appear with a sudden onset; they come insidiously and tediously, and much time and study are required for both diagnosis and treatment. At present in Rhode Island there is no place to treat and study the incipient psychoses. The hospital for mental diseases provided by the State is not a proper place to which to commit an anxiety neurosis. In the first place, a commitment is not necessary, and further, there is still the stigma attached to the place where many people who have been touched by the moon are kept for restraint. A greater group, who is not in the least provided for, is composed of the younger patients who are still in their minority, the most hopeful class of cases for treatment by far.

Various suggestions have been made from time to time, and it is hoped that the City of Providence may attack the problem. If this is the case, the other portions of the State should be able to avail themselves of the opportunity thus provided, for such a hospital would undoubtedly attract an excellent staff, and to a psychopathic hospital the staff and social service department are the all-important features. Outlying districts are already being well supplied with hospitals for surgical and maternity needs, but the more special needs

of the relatively few psychopathic cases would never be filled except by men and hospitals who are found only in large communities as a rule. It is doubtful if the State should handle such an institution, for it is a very poor father to an inquisitive child, and research is an important need in such work.

The plight today of the eighteen-year old who feels a marked sense of inferiority, and feels it so keenly as to wish to escape life, is indeed a sad one in Rhode Island, if the family income is small or even average. If Providence provides such hospital need in the way which has been proposed, it will be well done, and the State might well make some appropriation whereby townships could be aided in part to defray the expense of having these special cases treated by the city.

The need is great and unquestioned, and it should behoove the medical profession to urge in all ways the erection of such a hospital.

MEDICAL AND SURGICAL FEES

There has been from the public of late a good deal of complaint regarding the cost incurred from illness. Doctor William W. Keene's answer to the article published in the *Atlantic Monthly* entitled, "The High Cost of Being Sick," is a most able presentation of the medical man's situation, and shows clearly the vast amount of charity done by all surgeons and physicians.

One of the first causes of complaint from the layman seems to be against the system of charging for major surgical operations one-tenth of the earnings of the year, and the question has been asked whether a surgeon would charge one-tenth of a million dollars for a surgical operation, if that large sum happened to be the individual's income for the year. This would seem a very proper question, and might properly bring up anew the whole question of medical and surgical fees. With the increase in fortunes in America, we are facing a changing economic situation, and, therefore, it might seem well from time to time for the medical associations to review the matter of fees. There have been many cases recently in which the patient has protested the surgeon's bill, and I know of at least two cases in which, when a surgical bill representing one-tenth of the pa-

tient's income for the year was presented, it was protested, and one-half the sum asked was finally paid. This certainly does not seem a dignified procedure. Could not a new schedule, with minimum and maximum fees for operations, be decided upon, and a maximum per hour charge for other medical services be determined? Of course, the argument can be advanced that if individuals do not want to pay large fees they need not go to the surgeons whose practice it is to charge fees based upon one-tenth of the income, but certain people will always go to the surgeon with the greatest reputation, and certainly those surgeons do not want to bring the rest of the profession into the position of being considered members of a profession exorbitant in its charges. Perhaps the one-tenth of the income basis of charge for major operations is a right and proper one. If it is, this should be established in the medical councils and be firmly adhered to when an issue is made, thus avoiding the result of cutting a fee in half. Have our medical councils recently agreed upon maximum and minimum charges? If they have not so done recently, it would seem the policy of wisdom to do so.

SOCIETIES

THE RHODE ISLAND MEDICAL SOCIETY

The regular quarterly meeting of the Rhode Island Medical Society was held in the Medical Library, March 1, 1928, with the president, Dr. Norman M. MacLeod, presiding. After the reading of the minutes of the December meeting by the secretary, the president made the following appointments:

Delegates to the Maine Medical Society: Dr. Guy W. Wells, Dr. Henry L. Johnson.

Delegates to the New Hampshire Medical Society: Dr. F. N. Brown, Dr. T. J. McLaughlin.

Delegates to the Vermont Medical Society: Dr. Joseph Hawkins, Dr. J. E. Donley.

Delegates to the Massachusetts Medical Society: Dr. Roland Hammond, Dr. Lucius Kingman.

Delegates to Connecticut Medical Society: Dr. A. C. Sanford, Dr. E. V. Murphy.

Member at Large of the R. I. Medical Library Bldg. Board of Trustees: Dr. H. A. Manchester.

Anniversary Chairman: Dr. E. V. Murphy.

The president announced the death of Dr. A. A. Mann, Central Falls, R. I., who served the R. I. Medical Society as president in the years 1910-11, and referred the matter to the Committee on Necrology.

The following program was presented:

1. "The Doctor Decides." Moving pictures through the courtesy of the R. I. Tuberculosis Association and the State Board of Health.

Dr. H. L. Barnes, of Wallum Lake, R. I., spoke about the importance of early diagnosis, and stressed examination of the whole family where one member has shown evidence of tuberculosis. He also stressed the value of X-Ray in diagnosis of chest tuberculosis. On motion of Dr. Barnes, duly seconded, the following Resolution was adopted and referred to the House of Delegates:

"Realizing that many cases of incipient tuberculosis could be saved if physicians were consulted in the early stages instead of the advanced, the Rhode Island Medical Society hereby approves and endorses the efforts of the Rhode Island Tuberculosis Association to awaken the public to the dangers of the delay in establishing a diagnosis of the disease.

2. "Surgery in Diabetics." This paper was read by Dr. Alex. M. Burgess.

3. "The Role of the Naval Medical Service in the Construction of the Panama Canal." Capt. Wm. H. Bell (M.C.), U. S. N., Commanding Officer of U. S. Naval Hospital, Newport, R. I.

Collation.
Adjourned.

J. W. LEECH, M.D.
Secretary

HOSPITALS

THE MEMORIAL HOSPITAL

The following is a copy of the minutes of the Memorial Hospital Staff meeting held March 1, 1928:

Meeting called to order by President Wheaton at 8:45 P. M.

Records of previous meeting read and approved.

Records were approved, having been gone over at a previous meeting of the Executive Committee of the Staff.

No other routine business transacted.

Dr. Joseph F. Hawkins gave a very interesting "Travel Talk" with illustrations.

Dr. Hawkins was thanked by President Wheaton on behalf of the staff for his very interesting talk.

Collation served and meeting adjourned.

JOHN F. KENNEY, M.D.
Secretary, Memorial Hospital Staff

ANNOUNCEMENTS

The 13th Annual Convention of the Catholic Hospital Association of the United States and Canada and the Second Annual Hospital Clinical Congress of North America will be held in the Cincinnati Music Hall, Cincinnati, Ohio, June 18th to 22nd, inclusive, 1928. The Fourth Annual Convention of the International Guild of Nurses will be held at the same time, in the same building, at night meetings.

This Convention and Congress will be one of the largest and most important hospital meetings of the year, and will comprise general scientific meetings, special clinics or demonstrations of hospital departments, and three hundred special commercial and educational exhibits. Outstanding authorities in medicine, surgery, pathology, nursing, dietetics and hospital administration, architecture and engineering will lecture and demonstrate in specially planned clinics representing the various departments of the modern hospital. A professional program of the highest interest and value is now being formulated, and all persons interested in medical and hospital service are cordially invited to attend. Further information may be obtained from John R. Hughes, M.D., Dean of the College of Hospital Administration, Marquette University, Milwaukee, Wisconsin, who is General Chairman of the Convention and Congress.

AMERICAN COMMITTEE

for attendance at the

FIRST INTERNATIONAL OTO-RHINO LARYNGOLOGICAL CONGRESS

Sailing from New York, July 6th, 1928

25 Broadway, New York

COMMITTEE

Dr. Thomas J. Harris, New York
Dr. Robert L. Loughran, New York
Dr. George M. Coates, Philadelphia
Dr. Henry B. Orton, Newark, N. J.
Dr. W. P. Wherry, Omaha, Neb.
Major C. P. Mills, New York
Mr. P. G. B. Morriss

N-E-W-S

Eye, ear, nose and throat doctors of the world will meet for the first time at the First International Congress of the Oto-Rhino-Laryngological Society, to be held in Copenhagen, Denmark, July 29 to August 1. That was the announcement made today by the American Committee of the Society, 25 Broadway, New York.

More than seventy-five specialists will represent the United States at the Congress. These doctors will also spend some time visiting at various large cities in France, England, Germany, Norway and Sweden. Clinical discussions will be held in these countries with European doctors presiding.

The Congress will concern itself with questions relating to the treatment of the many maladies, injuries and infections of the eye, ear, nose and throat. It has been reported from abroad that very successful methods have been found for sinus trouble and middle ear deafness.

BOOK REVIEWS

DISEASES OF THE MOUTH

BY STERLING V. MEAD, D.D.S.
C. V. Mosby Co., Publishers.

This is written by a dentist and should make an excellent reference book for dentists. The first third deals with the pathology of the teeth and the

rest of the book takes up all other diseased conditions in the mouth and even in the adjacent areas; for instance, diseases of the tonsil and pharynx, infections and tumors of the sinuses and parotid gland are dealt with. As practically every disease of the human body has mouth manifestations it can be seen that this is a comprehensive treatise. And in a book of less than 600 pages with large type and wide margins it follows that most subjects have to be treated in a superficial, sketchy manner. But with these limitations it is an excellent book. It is well arranged and well indexed. Any given matter is easily run down and there is a concise straight-forward, if limited, statement of the subject. At the end of each chapter is a lengthy bibliography. The outstanding feature of the book is its illustrations and plates, over 300 in number and beautifully reproduced on the heavy glazed paper of which the book is formed. A large part of these are reproductions of X-rays and contrary to rule these are as clear as and with the fine detail of the films themselves.

INTERNATIONAL CLINICS

(Pocket Formulary)

Volume II, 37th Series

By GEORGE E. REHBERGER, M. D.

J. B. Lippincott Co., Publishers.

An interesting and suggestive volume far removed from the text book type which latter after all is what most of us need and to which we necessarily have to devote most of our reading time. Full of piquant and tasty tidbits for between meals snacks but very unsatisfactory for a square meal.

There are several excellent papers by men of standing, some well worked up clinics by other eminent men, an off-hand haphazard talk by a surgeon certainly very well known and some elaborately prepared and illustrated articles by men whose theories are certainly not yet accepted by recognized authorities. Then there are travel clinics giving an impressionistic view of what is going on in European Medical centres.

Medical questionnaires from the National Board of Medical Examiners serve as a variant of the recently popular ask-me-another games and would probably be chastening to the spirits of all of us five years out of school. President Coolidge's ex-

cellent address at the Washington Convention is given in full.

An excellent publication for the man who is travelling in too dull a manner along his own narrow rut of medical life.

DISEASES OF SKIN (*Third Edition*) by Henry H. Hazen, A.M., M.D., Prof. of Dermatology at Georgetown University. Published by The C. V. Mosby Co., St. Louis, Mo. 572 pages.

The present edition has several changes. There is a better classification of diseases and in omitting any reference to eczema it shows the trend of dermatologists of today, for this hapless word has been, in the past, a cover under which many heretofore obscure conditions were hidden. Dr. Hazen has emphasized this in several places in his book and under the caption "Anaphylactic Dermatitis" he is pointing the way toward a better nomenclature.

His use of X-ray, radium, fulguration and the Alpine lamp has been brought up to date. His treatment of the histopathology of the skin diseases is very good for a book of this size. The illustrations are excellent.

His chapter on hygiene is very commendable for many larger works fail to mention this very important subject.

The book is of a convenient size, excellent for the student and general practitioner. It is written clearly and to the point.

MISCELLANEOUS

CONJUGAL TUBERCULOSIS

Arnold Minnig, Denver (*Journal A. M. A.*, Nov. 19, 1927), has reviewed 6,000 dispensary cases with reference to the incidence of tuberculosis in husband and wife. There were 1,888 married or widowed patients. Among these, there were 319 cases, or 16.8 per cent, in which both consorts had active tuberculosis or one or the other died of the disease. Of the 319 patients, 104 were widowed on account of phthisis. Of the 104, or 48 per cent, who were so widowed, fifty consorts had developed active tuberculosis. Of

this 319, 181 were female and 138 male. The reason for the predominant number of females being infected may be explained by the fact that the wife is usually the nurse when the husband becomes ill. In other words, when there was a massive infection as occurs when one of the consorts died, one out of two developed the disease. These observations show something definite; viz., in a large number of cases adult infection is present and a danger. While not every adult who is exposed to tuberculosis is going to be infected, yet if he or she is below par, and the consort has open tuberculosis, there is one chance in six that the other is going to become infected. Also if the culture medium is good and the infection is especially massive, as in the case of a dying consort, the chances are one in two that the other will become infected. It was rather striking that of these 319 patients with conjugal tuberculosis only eleven were born in Colorado, and of these only five died of the disease, a forcible argument in favor of climate. Another aspect was whether, when the woman developed tuberculosis, the man remained faithful to his wife, and when the man developed tuberculosis, whether the wife remained faithful to the husband. In the greater number of cases the man was more faithful to his wife than the wife was faithful to the husband. Hygienic living and intelligent prophylaxis have a marked and evident beneficial effect. Tuberculosis in the mother is the most dangerous contact, and is the more frequent in marital tuberculosis. Whether one believes in exogenous or endogenous infection or both, proper prophylactic precautions must be observed. That each bacillus is to be feared is uncalled for because of the very strong natural immunity existing in man. Minnig feels now that sufficient data are at hand, that it is possible to announce that there is adult infection and that this conclusion should be propagated in an intelligent way through social agencies, the press, and the physician.

CONSTIPATION

Russell S. Boles, Philadelphia (*Journal A. M. A.*, Nov. 19, 1927), emphasizes what appears to him must eventually become the modern conception of constipation; namely, that the usual type (excluding mechanical and organic types) encoun-

tered today, in city life particularly, is a functional nervous disorder. While an improper diet, consisting of foods too greatly refined and containing too few vitamins, sedentary habits and other current explanations of the condition are important, the fundamental idea always to be borne in mind is that constipation manifests itself only in a soil which has been prepared through the agency of an unstable nervous system. This may be congenital or it may be acquired through the unceasing combat with the demands of modern civilization. Treatment can never be routine. Individualization is imperative. The management of constipation must begin with its prevention, and this must start in infancy. Infants should be held in a squatting position with the thighs flexed on the abdomen. Children should not be compelled to sit with dangling feet on high toilets; a stool should be placed under their feet. This simple procedure is also helpful to adults with weak abdominal muscles. The establishment of a regular time for defecation (after each meal, or at least after breakfast) and strict adherence to the schedule are essential. The act should never be hurried, and the mind should not be unduly concentrated on it. As regards diet, the food must be sufficient in quantity, and must be ingested at regular hours. The teeth should be in good condition in order to masticate it properly, but it should not be fletcherized. The character of the diet must always be modified to suit the individual; what is good for the lean is not good for the obese; what benefits the atonic type may harm the spastic type. The presence of an associated disease, such as diabetes or ulcer, obviously calls for a modification in the character, variety and preparation of food. Generally speaking, a proper selection of food should be made from all the fruits and green (above ground) vegetables, since these are rich in cellulose and contain the necessary salts, vitamins and organic acids. In spastic constipation many of these foods are not permitted because of their high cellulose content. For the same reason bran may be harmful. For such patients the underground vegetables and starchy foods, such as potatoes, rice, macaroni, strained cereals, and white bread instead of whole wheat bread, with the avoidance of skins, seeds, etc., are desirable, but for a short time only. Later, stewed fruits and well cooked green vegetables may be allowed. While a certain amount of meat is advisable, it

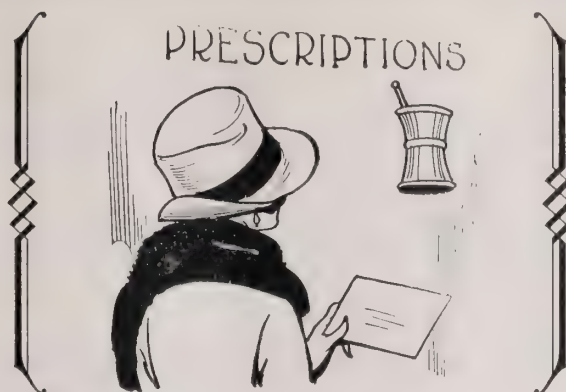
should always be taken in moderation. Although the vegetable proteins are perhaps not so quickly assimilated as those of animal origin, they nevertheless meet the requirements for good health. A sufficient amount of water is always required—hot water, especially on rising, for the spastic patient, cold for the atonic. Various hydrotherapeutic measures, such as hot baths and hot applications, preferably in the form of abdominal packs, aid in relieving spasm. For emaciated and visceroptotic patients a well fitted abdominal pad is helpful. In all cases a moderate amount of exercise, particularly of the abdominal muscles, is required. In addition to active exercise, abdominal massage and electricity are indicated. In the spastic type light massage and the galvanic current are helpful, while in atonic cases vigorous massage and an interrupted sinusoidal current may be employed. Deep breathing exercises are always beneficial. Enemas are useful in cases of rectal constipation (dyschezia). Transduodenal lavage and colonic irrigations, when properly administered, are temporarily advantageous especially when there is an intensive toxemia. In the spastic types the temperature of the solution should be about 100 to 104 F., in atonic cases about 90 F. Drugs are rarely indicated, except in cases of acute illness or when the constipation is the result of such conditions as senility, anemia, cancer, diabetes, kidney disease or insanity. It is inadvisable to prescribe cathartics as a routine; if they must be used, they should be selected with extreme nicety to fit the individual case. Cascara is suitable for aged men and pregnant women. Saline are not appropriate for dyschezia. Liquid petrolatum, agar-agar and psyllium seeds will not harm any one, and are often distinctly beneficial. Toxin-absorbing agents as koalin, and the various toxin-preventive substances, such as lactose and lactose-dextrin are decidedly worthy of trial. In spastic cases sedatives (bromides, atropine, belladonna, hydrastis, etc.) are distinctly helpful. In atonic cases and in those with nervous depression, strychnine, which is supposed to stimulate Auerbach's plexus, and other tonics are indicated. Thyroid and ovarian substances are helpful in suitable cases. Psychotherapy has served as a most important means of approach in correcting nonorganic constipation.

FEE-SPLITTING QUACKERY

"Radithor" is one of the numerous pieces of quackery in the field of radioactivity. It is exploited by the Bailey Radium Laboratories of East Orange, N. J., the moving spirit of which is one William J. A. Bailey, whose past record with "patent medicine" concerns and a fake engineering corporation was dealt with in *THE JOURNAL*, January 29. The Radithor quackery consists of thirty half ounce bottles of distilled water which is alleged to be radioactive. No less than thirty bottles can be purchased; and the price is \$30. That is, the price to the sucker who happens to be a layman is \$30; to the easy mark who can write M.D. after his name, it is \$25. There are two order forms, one, the "Standard Order Form" that the layman fills out; the other, the "Special Order Form for Doctors' Use Only." This form states that "when patient buys direct, we allow doctor a \$5 credit on all orders." The physician who would order Radithor must be weak not only in medicine but also in morals.—*Jour. A. M. A.*

PULMONARY EMBOLISM FOLLOWING OXYGEN INJECTION OF KNEE

Samuel Kleinberg, New York (*Journal A.M.A.*, July 16, 1927), cites a case of pneumarthrosis, in which pulmonary embolism and cardio-vascular failure immediately followed the accidental injection of oxygen into the circulation. The heart stopped beating first, followed in about five minutes by the cessation of respiration. Artificial respiration was instituted, but for about ten minutes the patient was apparently dead. An injection of epinephrine hydrochloride into the heart revived the patient and prevented what appeared a certain catastrophe. The accident was the result of faulty technic, which is acknowledged in detail, so that it may never happen again. The author in making this report hopes that it will not deter others from using pneumarthrosis, which is an invaluable diagnostic test in doubtful and properly selected cases.



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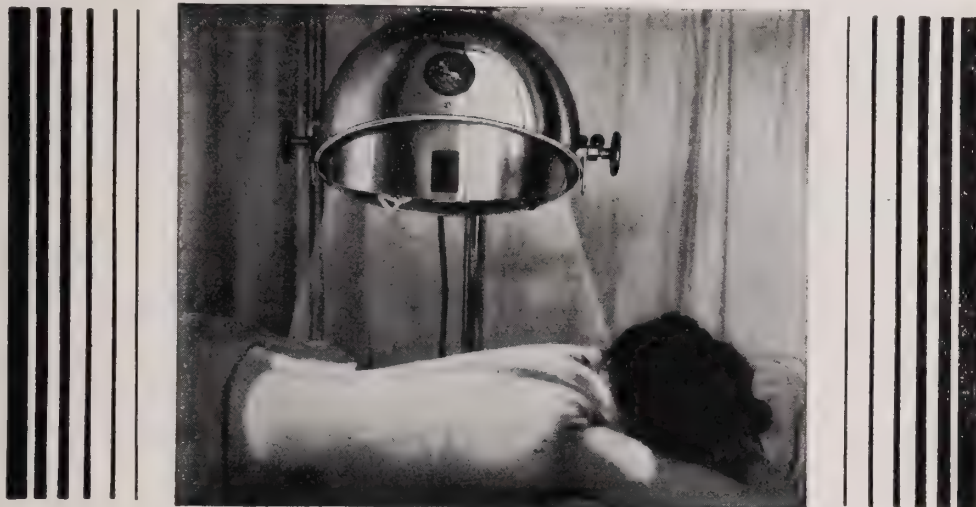
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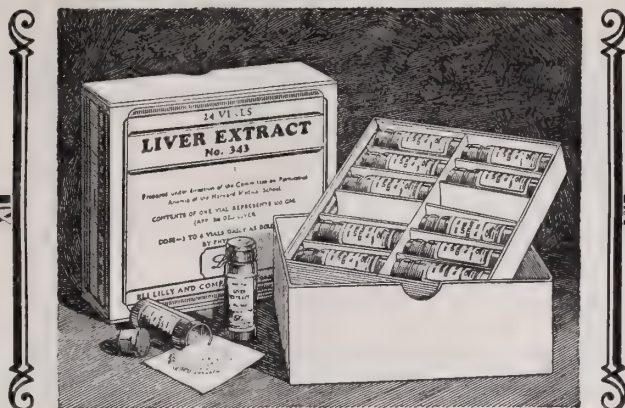
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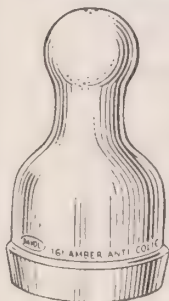


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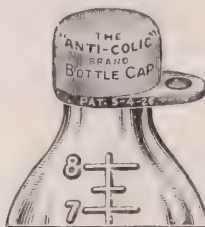
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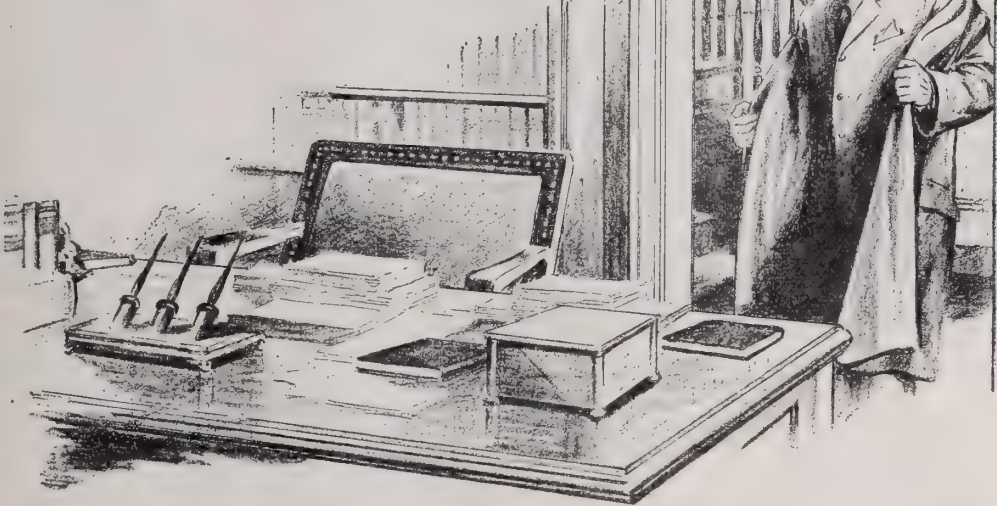
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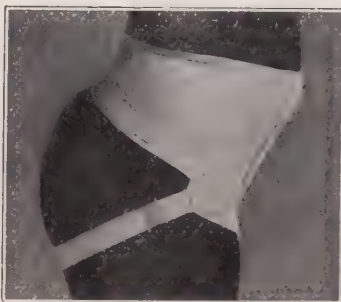
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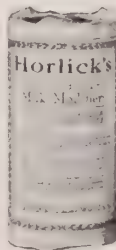
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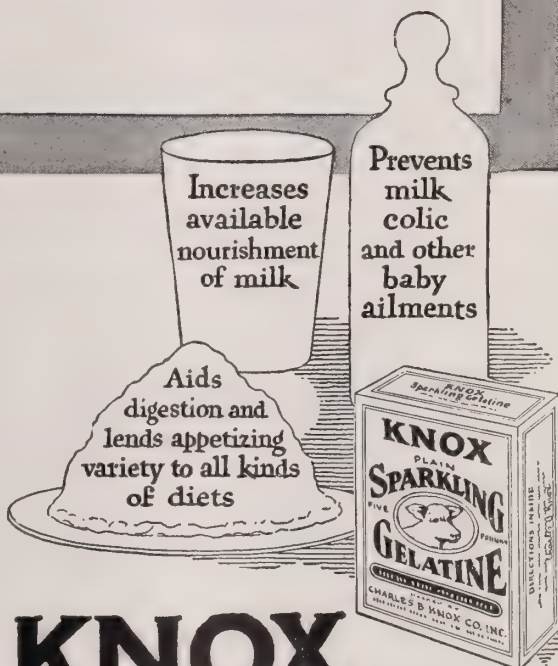
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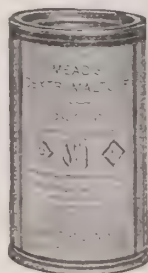
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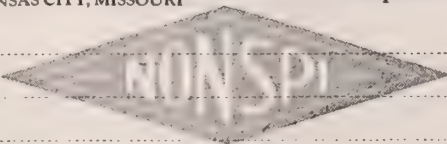
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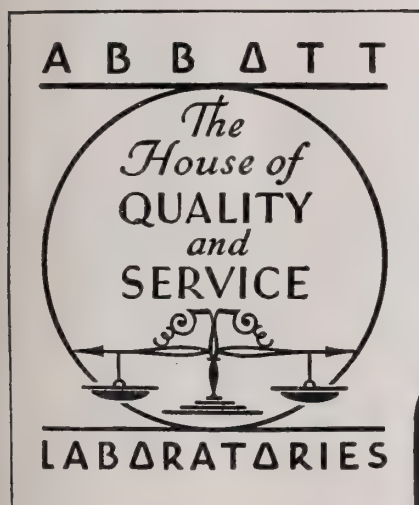
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ORIGINAL ARTICLES

THE RENAL FACTOR IN CHRONIC GASTRO-INTESTINAL SYMPTOMATOLOGY*

By

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40 E. 41st Street,
NEW YORK CITY.

The association of gastro-intestinal disturbances in connection with renal disease has its commonest recognition, perhaps, in the accompanying nausea and vomiting of chronic nephritis. The stomach and intestinal symptoms seen in acute surgical conditions of the kidney pelvis and ureter and principally noted in stone and other obstructions are also familiar and the text-book descriptions of the so-called Dietl's crisis always included an enumeration of these phenomena.

The factor of chronic, non-suppurating kidney disease serving as a basis of reflex disturbance in the stomach and upper and lower intestinal tract is not generally borne in mind. Movable kidney up to ten years ago was a common diagnosis. In a study from the Johns Hopkins Hospital, 177 cases of movable right kidney were reported. Sixty-eight or 38% had solely stomach symptoms. Operation done on the 68 was followed by marked relief in 46 or 69%.

The development of pyelography has dismissed the diagnosis of mobility as an entity and pointed out wherein the resulting pelvic and cortical changes resulting from the mobility were more to be reckoned with, and that relief or amelioration of these conditions contributed largely to a diminution or a cessation of symptoms. In a communication before the Harlem Medical Society in New York in 1924, the writer called attention to varied stomach conditions met with in kidney disease and reported a series of cases illustrating this point.

*Read before Providence Medical Association, March 7, 1927.

As illustrating the occurrence of gastro-intestinal symptoms in a long period of years, the following cases will serve:—

Mrs. H. B., age 49.

Treated at clinic of St. Bartholomew's Hospital for past six years. Original symptoms chiefly gastric in the form of distress after meals, occasional belching and rarely nausea and vomiting. Several gastro-intestinal series made and showed no abnormality of tract. Analysis of stomach contents showed slight increase in acidity and excessive mucus. No exacerbation of symptoms during past four years and symptoms usually more marked at noon and night. No pain over stomach unless the occasional sense of fullness. Moderate relief from soda bicarb. Urine examination shows occasional pus cell and



FIG. 1

Note complete destruction of right kidney which exists merely as a shell. Case 1.

red blood corpuscles. Faint trace of albumen. Cystoscopic examination performed at the New York Hospital. Both ureters catheterized without difficulty, bladder negative. Excretion from left side normal—P. S. P. appears in $3\frac{1}{2}$ minutes with good concentration. Dye appears on right

side in 15 minutes. Excretion on this side very watery and profuse. Polygram done on the right side which shows a shell of kidney the size of a small pear with apparent destruction of entire kidney tissue. Operation advised. Kidney cortex found entirely destroyed and no functional tissue noted. Nephrectomy. Marked improvement and complete disappearance of symptoms. Patient communicated with two years after operation and continues well.

Mrs. R. S., age 32. Referred by Dr. Armistead C. Crump.

Patient has suffered with gastro-intestinal symptoms for four years past. Originally operated on for appendectomy and was told at the time that she had a gastropotosis. Later exploratory laparotomy and gall bladder drained. Discomfort continues in the form of attacks of pain over the gall bladder, radiating into the right shoulder. Patient also has marked precordial distress and was told that she had heart trouble. Treated for this condition with digitalis and has been using amyl nitrate during the attacks. Urine examination showed a few red blood cells and an occasional pus cell. Cystoscopy done at St. Bartholomew Hospital showed kidney on right side less active than opposite side. Phenol-sulphonephthalein appears on left side in three minutes and on the right side in six minutes. Total excretion on the right side is 2.5% and on the left side 4%. Pyelogram shows a markedly ptosed kidney with dilatation of the pelvic ureter and a moderate hydronephrosis. There was also considerable evidence of inflammatory dilatation of the mucosa of the ureter and pelvis. Patient given dilations at monthly intervals for six months and pelvic lavage with silver nitrate. Marked relief of symptoms following these treatments but attacks returned and there was no improvement noted in the cardiac condition. Cystoscopy done at New York Hospital one year later and at that time pelvis noted as dilated to one third greater size with lessened function. P. S. P. appears in six minutes and appears on good side in three minutes. Operation advised but refused by patient. Later consulted Doctor J. Bentley Squier who did a nephropexy on this side. Patient seen six months later with marked relief of symptoms and complete disappearance of gastric distress.

In a consideration of the causes which may produce these localized changes, accessory and

aberrant renal blood vessels must be given thought. Eisendrath's original communication on the subject still remains the most classical study available, and further progress must come from constantly bearing in mind the possibility of this anomaly in all pelvic changes, particularly where



FIG. 2

Pyelogram of Case No. 2—Referred by Dr. Crump. Mrs. S. Note sagging kidney shadow, slight hydronephrosis and angulation of ureter in upper pole.

infection has not been demonstrated. Dilatation of the kidney pelvis and ureter occurs in response to two factors; (a) infection with intermittent obstruction and inadequate drainage, and (b) intermittent obstruction either without infection entirely or with infection to a pronounced degree as to render the urine irritating. Anomalies affecting the blood supply to the kidney occur in

nearly 50 per cent of cases. The renal arteries are usually increased in number, or divide at once—before reaching the hilum—into several branches—foetal condition in the human species



FIG. 3

Radiograph of patient examined for hematuria. Blood seen coming from right ureter. X-ray shows shadow of eight gall stones apparently in same position as kidney. Signet ring shadow of stone however typical of gall stone. No symptoms from these stones with exception of hematuria and definite gastro-intestinal disturbances.

that are permanent in many birds and reptiles. Accessory or supernumerary veins are much more rarely found.

The mechanism responsible for the diffusion of irritating impulses which are subsequently developed into symptoms in other organs is dependent on the common sympathetic nerve supply of the kidney and upper gastro-intestinal tract. Further development of this principle makes it possible to lay down a series of zones almost corresponding to cranial disturbances, wherein three separate groups of symptoms may be noted as corresponding to the individual innervations of the portions of the genito-urinary tract, e. g.—1. the kidney and its capsule—2. the ureter and the bladder, prostrate and seminal vesicles.

The nerves of the kidney are derived from the renal plexus formed by contributions from the solar and aortic plexuses and the last splanchnic nerve. The plexus accompanies the renal artery,

which it surrounds with its mesh-work, into the pelvis; within the later if formed a well-marked perivascular net-work from which a number of twigs are given off to supply the walls of the pelvis and ureter, while the majority accompany the vessels into the kidney. The investigations of Retzius, Kolliker, Disse, Berkley, and especially of Smirnow, have shown that all the renal blood vessels are generously provided with fibres for the supply of the muscular tissue of their walls. In continuation the nerve-fibres pass between the uriniferous tubules and form plexuses surrounding the membrana propria.

The ultimate fibrillæ within the tubules have their free endings lying between the epithelial cells. The vessels and tubules of the medulla are provided with similar but less closely disposed nervous filaments which are destined chiefly for the muscular tissue. The nerves of the kidney include some sensory and both medullated and non-medullated fibres. The fibrous capsule also possesses a rich nervous supply.

This is most important, because it is through this innervation that most symptoms are transmitted. The capsule and pelvis of the kidney are the sensitive portions and renal pain, not dependent on infection, or on the irritation of a

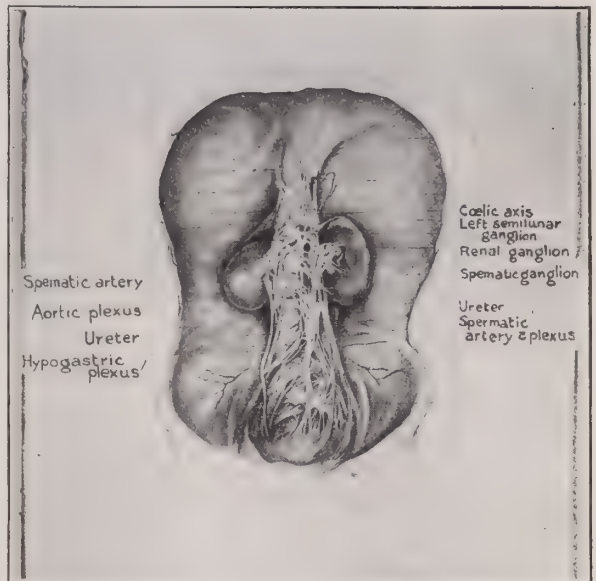


FIG. 4

Plate showing intimate innervation of the kidney and its connection with the solar plexus. Note corresponding innervation of ureter and hypogastric plexus and densely intercommunicating nerve supply of the entire region.

calculus or on displacement, usually means increased tension. The great relief of both pain and congestion that is often experienced after nephrotomies that are merely exploratory depend on the relief of the tension. Occasional cures of



FIG. 5

Pyelogram of a case through the courtesy of the Urological Department of the James Buchanan Brady Foundation of the New York Hospital. Patient complained definitely of gastro-intestinal symptoms. Note degree of hydronephrosis, obliterated major calyces with blunted end and angulation of ureter.

various forms of acute or subacute nephritis, or of "albuminuria associated with kidney tension," have been obtained merely by splitting the kidney capsule with or without puncture of the kidney itself. The nerves of the ureter, derived from the sympathetic system, accompany the arteries and come from the renal, hypogastric and spermatic plexuses. Within the adventitia they form a plexus containing numerous microscopic ganglia, the largest of which are at the upper and lower ends of the duct. In addition to the fibres supplying the blood vessels, both medullated and

non-medullated fibres pass to the muscular and mucous coats.

In general, however, the associated sympathetic nerve supply of the renal cortex and pelvis is the solar plexus. The ureter derives its supply from the hypogastric plexus. This plexus also sends fibres to the intestinal tract. The lower third of the ureter has an accessory innervation from the spermatic or ovarian plexus. From this combined innervation, painful stimuli received in these separate portions of the genito-urinary tract, will be referred, in the absence of a localizing sense in the organ itself, to a neighboring viscus having the same supply. Consequently, lesions limited to the pelvis of the kidney are expressed symptomatically in the form of stomach disturbances and additional involvement of the ureter will include dissemination of the impulses into the lower abdomen. Infection will change this picture, by producing a local congestion and increase vascularity, and provides a definite sensitization. It is to the vast number of cases where infection does not exist that this communication calls attention.

The confusion in gall bladder symptoms is greater, inasmuch as the symptoms may be inexchangeable. A suppurative process in the gall bladder—with or without stone formation may produce renal symptoms reflexly or by mechanical ureter pressure with drainage develop a low grade pyelitis into a sizable condition. Conversely a renal condition may produce gall bladder symptomatology to a degree that operation seems indicated in the gall bladder, in the absence of localizing kidney symptoms. Here the mechanical factor has a definite role.

In movable kidney, pain is due in some cases to traction on the vessels and the resulting congestion of the kidney. This may be so marked at times as to give a hematuria. There is a history of digestive disturbance, constipation in some cases and in other cases jaundice. It is also due to direct traction of the gastro-intestinal tract. The second portion of the duodenum is dragged upon through its areolar tissue connection with the right kidney; its lack of mesentery prevents it from moving forward, and it is stretched so that its lumen is diminished, and interference with the digestive current and secondary dilatation of the stomach follow. At the same time the bile ducts are elongated and nar-

rowed and the passage of bile through them is interfered with. On the left side similar disturbance of digestion may follow the pull of the kidney on the stomach and colon. In the traction upon the vessels themselves the compressible renal vein is more readily affected, and the arterial supply is maintained to a degree sufficient to give a hematuria.

I have selected a group of cases in support of this principle in which a distinct degree of pathology has been made out in the upper portion of the genito-urinary tract; and the symptomatology has been entirely gastro-intestinal. Symptoms were present in such a degree as to warrant a G.I. series of X-rays in practically every case. They have been referred to

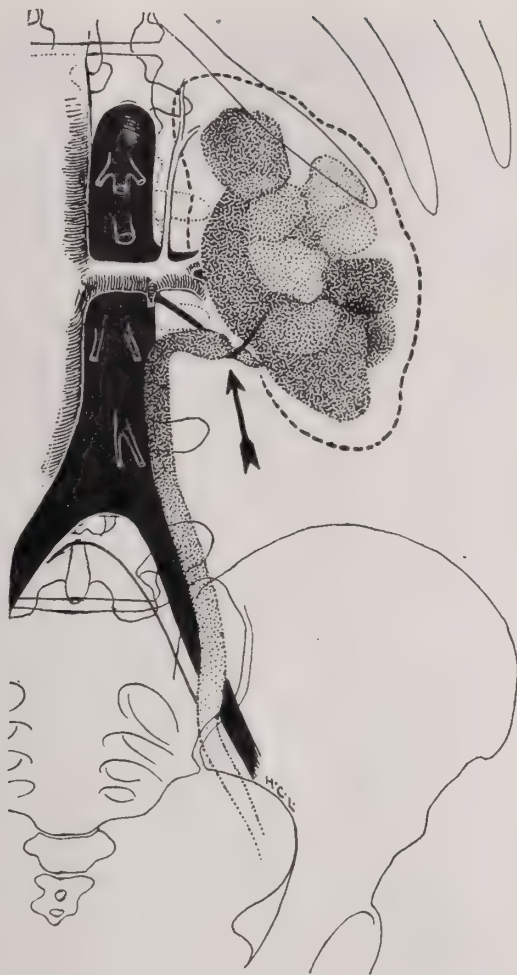


FIG. 6

Pyelogram of case of hydronephrosis due to aberrant artery. Patient had suffered from gastric distress and mild gastro-intestinal symptoms for several years. Never any urinary symptoms. Laterally pain in back. Cystoscopy showed delayed function on left side. P. S. P. appeared in six min. on left side; four min. on right. Operation decided upon and considerable normal renal tissue found. Aberrant artery identified and severed—kidney spared. Six months afterwards kidney one-third its size and functioning normally. Note diagram showing anatomical condition.

me for kidney examination either on account of the presence of pus in the urine and more recently since I have shown the importance of kidney examination, to eliminate kidney pathology. It is interesting to note distribution of the cases from the standpoint of urological diagnosis.

Of 128 cases examined, 104 or 75% showed positive findings which I felt accounted for the symptoms. There were 18 cases of undue mobility with and without infection. Thirty cases of pyelonephritis with or without renal mobility,



FIG. 7

Ureterogram of case presenting gastric symptoms accompanied by right-sided pain. Impossible to fill pelvis owing to obstruction at upper end of ureter. Diminished function on this side. At operation, practically the identical condition as noted in figure 6 found. Aberrant vessels severed, kidney fixed in position and wound closed tight. Recovery—freedom from symptoms for one year following operation.

30 cases of hydronephrosis and hydro-ureter. Eight cases of kidney tumor, six cases of polycystic disease of the kidney and twelve cases of stone in the kidney.

For the purpose of study 128 cases were grouped comprising 68 cases from St. Bartholomew's Hospital, 29 cases from New York Hospital and 31 cases from my own practice. This series compiled over a year ago is now considerably increased.

It may seem strange that the urinary findings were not more constantly present in these cases, and this is particularly true in case of the tumors but the explanation is that at that particular time the tumor was not bleeding and in most of these cases the urinary findings were explained by the diagnosis of chronic cystitis.

It is well recognized that a low grade inflammatory process may be in existence for a long period of time, and if adequate drainage is provided the kidney extension is so gradual that local symptoms are absent. A pyonephrosis is always the result of a secondary infection in the presence of acute obstruction.

The principal factor in the development of a localization sense is inflammation. In these cases the pain described is not distinctly renal but rather such sensations as dull throbbing, aching, etc. A fitting example of the course of pain as a result of the inflammatory change and also illustrative of the idea of my original statement regarding distribution of pain is seen in the case of acute appendicitis. Here the pain at first is epigastric, later as inflammatory change takes place in the neighborhood of the cecum the symptoms are entirely restricted to that area.

CONCLUSIONS

1. In the absence of demonstrable gastric or duodenal lesions in cases presenting gastro-intestinal symptoms, the possibility of reflex irritations from surgical kidney disease must be borne in mind.
2. With the occasional exceptions of acute nausea and vomiting, the symptoms seem limited to gas eructations, distress principally after meals, sense of fullness in the epigastrium, cardiac distress and similar functional disturbances.
3. In very exceptional cases of movable kidney attacks of pain occur which in every way simulate those of hepatic colic, such attacks being usually associated with jaundice. The location of pain in the attacks is always near the middle line, the radiation is toward the shoulder-blade, and injection of the kidney pelvis will not reproduce the pain. The jaundice associated with movable kidney is usually of short duration and not of great intensity.

SANITARY INSPECTION OF FOOD*

By

HOWARD A. STREETER, M.D.,

HEALTH OFFICER, MANCHESTER, N. H.

There are often so many types or kinds of inspections pertaining to the same object but designed to secure differing results that it is difficult to define within well recognized limits the scope of a particular activity. When food inspection is mentioned we instinctively think of purity, of adulteration, of substitution, of misbranding and of other things or conditions affecting or relating to the wholesomeness of the product. It must be admitted that in a strict sense it is difficult or well nigh impossible to absolutely separate sanitary from the purity inspection as pertaining to food because so often an impurity is also insanitary, and too if an individual or firm who manufactures food or prepares foods for sale is so unscrupulous as to adulterate the product, he is liable to be none too particular of the sanitary conditions of his establishment; hence, it generally happens that both purity and sanitary inspection must be combined to protect the consumer.

The old fashioned individual who constantly bemoans present day conditions and sighs for the past does not forget foods and food products in his lamentations but here, as elsewhere, he often displays a woeful lack of knowledge. Two and a half centuries before the Christian era, Archimedes demonstrated alloy in the crown worn by King Hiero. If workers in precious metals were not unwilling to cheat their king it is fair to assume that food purveyors might not be too scrupulous. In the heyday of the Roman Empire practices and conditions became so notorious that rulers were obliged to issue edicts. During the middle ages food merchants became so bold that severe penalties, even burning at the stake, were necessary to bring to merchants a realization of their obligations to society in general.

In the early days of this country foods were either produced by the householder or obtained by barter with a neighbor. Either method presented no incentive for deception. This period

of frank honesty was soon followed by one of rank dishonesty which persisted until large exporters in a frenzied effort to save their fast declining foreign trade asked, yea practically demanded federal inspection and federal guarantees for their products intended not for home consumption but for export trade. This was quickly followed by federal inspection for all products intended for interstate shipment. States and municipalities passed laws, rules and regulations governing manufacture and preparation of foods and food products sold within their several jurisdictions. These laws and regulations governed not only the sanitary but also the purity aspect of food preparations.

This is only a bare outline of past conditions but it serves to show the reason for present day food laws and regulations.

Food affects our health and efficiency and hence the aim of the food inspection is or should be to insure a safe, wholesome supply.

What does sanitary inspection mean? Sanitary is defined as "pertaining to or designed to secure health;" inspection—"a look on or into, a prying examination, official view or examination;" thus sanitary inspection is "an official view or examination designed to secure health," or as applied to the present discussion "an official examination designed to prevent impairment of health by foods."

Food inspection as such may be divided and subdivided almost ad infinitum but concisely it may be considered under three headings—adulteration, substitution, sanitation—the last of which is the topic under consideration.

It must be remembered that certain practices which at first sight might appear contrary to sanitary procedure have been legalized either by decision or by direct statute; for example, use of synthetic flavors, and synthetic colors is permitted if the same have been approved and are declared on the label although it is often difficult, to say the least, to find such declaration. Furthermore, colors are allowed in some foods and not in others—for instance it is legal to color butter without any declaration but illegal to color oleomargarine with declaration. The common soft drink, pop, carbonated beverage or whatever may be its designation is hardly in most instances more than a synthetic preparation capable, if the

*Read before the New England Health Institute held in Providence, R. I., Sept. 27 to 30, 1927.

proper kinds are used, of coloring one's insides a crazy patch design that would be the envy of the most ardent lover of that type of quilt and yet if sanitary rules are observed in its manufacture and the cap bears an insignificant legend 'Artificial color and flavor' the food inspector has no jurisdiction.

The types and amount of sanitary food inspection conducted by a health department depend in no small measure upon the size of the community, its location as regards available food supplies, the character of its population, and particularly of its merchants, and merchandising practices and upon funds appropriated.

Milk inspection, slaughter inspection, market inspection are generally included in the activities of health departments—other types of food inspectors are added as conditions warrant.

Sanitary food inspection, as stated above, should be conducted for the purpose of preventing contamination of foods by elements which are generally considered unclean and whose entrance into food products can be prevented.

Rules and regulations defining procedures to be followed in storing, manufacturing, displaying, or merchandising foods must be drawn to protect the consumer and at the same time must regard the rights of the merchant or producer. Neither the consumer nor the merchant should be considered solely because the one might be too severe while the other would probably be too lax. It would appear wise to establish a line of procedure which would give protection and at the same time could be defended with success should occasion arise.

Production of foods easily comes under two headings—those produced or grown in the open and those compounded or prepared within a building. Little supervision of foods growing in the open is necessary other than to note places where vegetables liable to be eaten raw are grown or to note the kind of fertilizer used in such places. While it is agreed that thorough washing removes contaminating elements, yet if this class of vegetables can be grown in spots known to be free from possible baneful elements, the degree of safety is greater. Manifestly it is practically impossible for the health department to inspect every garden from which vegetables may be shipped to its jurisdiction but in out-

breaks of intestinal diseases it is wise to know if possible the source of green vegetable supplies.

Use of arsenite or other sprays is presenting a problem which appears to be solved. However, an alert inspector should know something of the state of fruits and vegetables shipped to his city.

Inspection at the point of preparation of animals and fowl for food purposes makes unnecessary any extended attention at the point of merchandizing except in so far as such inspection may be necessary to secure compliance with general sanitary laws.

Inspection of places where foods are compounded or prepared for market will vary in kind and amount as there may be variation in kind and amount of food products prepared. Arrangements in a slaughterhouse would hardly befit a candy kitchen or ice cream plant; a factory where berries are canned would require different apparatus and arrangement than would be necessary in a factory preparing meat products, and so on. In fine, factories, or plants, or establishments where foods are prepared should be arranged and equipped to meet the needs of the business to be conducted therein and at all times should be clean and sanitary, due consideration being given to the business in question. To require compliance with proper rules and regulations and practices is the duty of the food inspector. This task is comparatively simple now because food manufacturers have learned that strict compliance with federal and state laws is essential to a successful business and further these firms are seeking inspection that it may be possible to so label the finished product.

The retailer generally comes under the exclusive attention of the local health department and here as in the case of the large manufacturer requirements must be in keeping with the business. Certain general requirements as healthy workers, clean, washable outer garments, proper toilet facilities, adequate waste receptacles, screening of doors, windows and other openings during the fly season, apply with equal force to all shops where food is sold. Conditions under which foods may be displayed or offered for sale may affect materially the state of the food before it reaches the consumer. It is difficult to make some shopkeepers realize that sidewalk or open window displays of fruits, berries, con-

fectionery, crackers and other foods is not necessary to entice customers. If the merchant must depend upon psychology to sell his goods, he should revise his code and learn that a customer who enters a store may see other goods and in addition an attractive display protected against contamination will sell where carelessness will repel.

Open air markets may be in principle a boon to the housewife but they present to the food official a real problem the solution of which often requires a goodly amount of wisdom.

As a rule dealers in foods are willing to comply with any reasonable suggestion which will aid to protect or improve their product.

Legal measures controlling foods and food products consist of federal, state, and local laws, rules, and regulations.

Federal Laws. Soon after the Spanish War, the American Press began an agitation for investigation into packing house practices. This was followed by a decline in the European demand for American meats and meat products. Because of this decline in their export trade, American packers asked for federal inspection which was granted for export articles only. A fresh and insistent demand by the home consumer resulted in federal inspection for all products. This was soon followed by the Pure Food and Drug Law. The federal law, Food and Drug, applies only to products shipped interstate, its provisions apply more to the finished product than to methods of its manufacture and to conditions which may obtain in any shop or factory where foods are prepared. Essentially the federal law is concerned with the purity of the end product but to obtain purity and to meet the requirements the manufacturer must observe sanitary practices; hence, the U. S. Pure Food Law is also a sanitary food law. The federal meat inspection law controls the sanitation of packing houses and the wholesomeness of the end product.

State Laws are patterned much after the federal law and were passed to control foods made and sold within the borders of the several states, with variations to meet local conditions.

New England laws, and please understand reference is now made to sanitary laws, vary from strict state provisions to a procedure which places the burden entirely upon the local community.

Maine. The Commissioner of Agriculture is directed to make uniform rules and regulations governing preparation and sale of foods and to establish standards. Regulations passed under this authority clearly define precautions to be

taken in preparation of foods; standards which must be met; and insanitary procedures which must be avoided. The commissioner of agriculture is the chief enforcement officer. The law does not state whether the commissioner may deputize the local health officials to secure enforcement within their several communities nor does it provide that the local officer shall enforce, nor is a local board of health given authority to make local regulations, or rather, it might be more correct to say, that such provisions have not been found.

New Hampshire has two distinct laws—a pure food and drug law and a sanitary food law. Under provisions of both laws, the State Board of Health is directed to make necessary rules and regulations. The pure food law is enforced by the State Board of Health and by such agents as it may designate.

The Sanitary Food Law distinctly states that local health officers shall assist in its enforcement.

Vermont has one law, the Pure Food and Drug Law, which embodies sanitary and purity inspection under one heading. This law specifically states that certain officials of the State Board of Health and local health officers are the enforcement officials.

The Massachusetts Law empowers local Boards of Health to pass sanitary food regulations subject to approval by the State Department of Health. Pure food laws and regulations are administered by the State Department of Health.

Conn. There is no state sanitary food law but local boards of health have authority to pass local regulations.

Rhode Island. Enforcement of food and drug laws in Rhode Island is vested in a board of food and drug commissioners. While there is no specific sanitary food law, sanitary practices are defined in the general law.

In addition to the general laws, and this applies to all New England states, there are specific laws applicable to certain commodities, as milk, ice cream, butter, vinegar, slaughtering, bottled drinks, canning, which embody certain sanitary standards.

Thus in New England sanitary food laws and regulations range from a standard set by a state department to a standard wholly within the jurisdiction and prerogative of the local board of health. It is fair to assume that the varied methods are satisfactory and ample and that it is possible to secure results in keeping with modern sanitary practices.

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R. I. Ophthalmological and Otological Society—2d Thursday—October, December, February, April and Annual at call of President. Dr. Francis B. Sargent, President; Dr. Joseph E. Raia, Secretary-Treasurer.

The R. I. Medico-Legal Society—Last Thursday—January, April, June and October. Dr. Creighton W. Skelton, President; Dr. Jacob S. Kelley, Secretary-Treasurer.

EDITORIALS

DIONYSIUS AND APHRODITE

Adolescents of the present day are placed in a peculiarly difficult position as regards the use of alcoholic beverages. Up to the last decade the youth of the land could look up to its elders and presumably betters as those who had decided openly and honestly upon their personal habits regarding the use of alcohol. Escapades alcoholic were common then, as now, and were all in the process of the crystallization of the habits of the individual—for better or for worse per-

haps—and not always without consequences. And now—what is the difference? Since the Great War and the Eighteenth Amendment the situation has changed in that now it is no more an honest matter to deal in alcoholics, and the zest of stolen fruit adds no little to the glamour of Bacchus beckoning to the boy. What can be expected of youth when it sees age, and middle-age, ever its patterns of action, entertaining bootleggers at its back doors and sneaking liquor into its clubs and homes.

All this is as familiar as the passing of the air mail plane across the sky. Both are facts of progress, whether forward or backward.

But there is another side to the matter. If it is true that despite the lack of help from the great majority of those of mature years, the young men of today are about as their fathers were in the matter of the consumption of alcohol, it is also true that many of the young women, the girls of "good family", are as free in this matter as are their brothers. This spells trouble. Dionysius, god of wine, was the son of Aphrodite. The characteristic action during the spasmodic or in the persistent use of alcohol is the weakening of inhibitions. While no statistics are available, it is probably not unfair to say that a great majority of those indiscretions which result in the acquiring of venereal disease are the result of this characteristic action of alcohol. Unquestionably if its use could be controlled the venereal disease problem, one of the most urgent of those confronting society today, would be eighty per cent solved. The open frankness and intellectual honesty of the rising generation may be its salvation in this as in many other of its problems. "Forewarned is forearmed" and the Journal believes that it is the duty of our profession to see that sane and irrefutable truths are placed before the youth of the country and the parents who must add not lip service only but the influence of practical example if they would guard their sons, and, especially, their daughters, from disaster.

"LABORATORIES"

An interesting newspaper advertisement arrested our attention because of its size and conspicuousness calling attention to the fact that a "Diet Laboratory" could be consulted and estimates of corrective diet, basal metabolism, blood and urine chemistry made and furnished. If this is not the practice of medicine we do not know what it is. The possibilities for good and evil of such an establishment are not at first apparent but with a little thought we begin to realize that the proprietor of such an establishment is assuming a responsibility of great moment and importance. The role of nurses in the practice of medicine has before now been discussed in these pages. Diagnosis, treatment and operations seem to be within their means and capabilities and there has been no dissenting voice. Comes

now the advertisement of a diagnostic factor which makes one gasp. Not long ago the one of our very ablest internal medicine men agreed with the writer that the chemistry of the blood was as yet in a very unsatisfactory state and that there were very few if any capable of accurately estimating blood calcium. One of the latest and supposedly the best books on chemical diagnosis did not treat of this subject except to quote a single monograph. The study of basal metabolism is one for an expert medical graduate and as to diet it alone is not enough to rely on in a case and even medical men ponder carefully before prescribing—please note the word. Another consideration is worthy of notice—the tremendous advantage that newspaper advertising gives. This person is able to immediately bring herself before say fifty thousand persons, a thing that a reputable physician might be glad to do were he not forbidden by the ethics of the profession. Indeed there are quite a few eminently ethical physicians who feel that the medical profession is more limited than it should be in its advertising. But this person without let or hindrance is in exactly the same case as a physician but without danger of suit for malpractice, of loss of professional status, of loss of reputation or any of the other things which medical men hold precious. She is furthermore in a position to do much harm and to spread false doctrine heresy and schism.

What is the use of medical examination and registration if a non-professional person can make diagnosis, give advice, present the patient with medicine and tell him when to come to the office next? Yet this is exactly what industrial and other nurses are doing daily. What availeth the restraints of medical ethics when a nurse or technician can advertise in the newspapers and bring his talents before the public. Of what use is a medical education when a charlatan can put Dr. on his sign and claim a knowledge of osteology when he does not even know the names of the bones, much less their topography and functions?

The remedy. That is not the function of this article or of this Journal but it may well be said that if there is a law it should be invoked and offenders restrained and punished and if there is no law there should be. Each year the non-professional practitioners become more and more brazen and flagrant, their propaganda more

active, their practises more vicious, their victims more numerous. The popular intelligence is being lowered, its judgment debased. Whoever is responsible for this state of things should be invoked and the medical profession should be active in seeing that the law is obeyed and that there is suitable legislation to meet the situation.

IMMUNIZATION AGAINST AND SERUM TREATMENT OF SCARLET FEVER

The successful human inoculation of scarlet fever by the Dicks has led to renewed interest in this disease. While successful human inoculation had previously been done by the injection of the secretions of the nose and throat of scarlet fever patients, the Dicks were the first to accomplish it by the injection of one kind or organism. To be sure they did not entirely fulfil Koch's postulates yet their work has received a great deal of credence.

There are several kinds of hemolytic streptococci but as yet there is no laboratory technique by which the scarlet fever hemolytic streptococcus can be identified. The method now used is to inject the toxin produced by a given strain into the skin of persons who have had scarlet fever and those who have not, relying on the Dick test. This is not scientific nor is it reliable. If there was available a scientific method of identifying the scarlet fever hemolytic streptococcus, the diagnosis of doubtful cases, and the determination of the length of isolation would be made much simpler.

In certain cities scarlet fever patients, or those suspected of having scarlet fever, are cultured for hemolytic streptococci and if any are present the diagnosis is confirmed. This is, of course, not a safe procedure. It should be stated, however, that a very large percentage of scarlet fever patients when cultured are found to have hemolytic-streptococci in their throats. Obviously, negative cultures, two at least, should be given more consideration than positive cultures, since the hemolytic-streptococcus found may not be the one which causes scarlet fever. Likewise patients in some cities are released from quarantine as soon as negative cultures are obtained. The reliability of this procedure remains to be deter-

mined. So also is the practice of continuing isolation as long as streptococci are found in the throat. Isolation might be unnecessarily prolonged.

The value of the Dick test is questionable. It is often positive in persons who have recently had scarlet fever and negative in persons who subsequently contract scarlet fever. Some companies which put out biological supplies do not sell the toxin for the Dick test. It may be that it can be made more accurate by perfecting the toxin used, but at present the test is unreliable. There is reason to believe, however, that scarlet fever toxin is of considerable value in producing immunity. Hospitals for contagious diseases are now using it with encouraging results. Five doses, each a week apart, is to be used, according to the advice of the Dicks. The inoculations are quite often attended by local and general reactions which, however, are not serious but sometimes rather distressing.

Scarlet fever anti-toxin is made by injecting horses with ascending doses of scarlet fever toxin, scarlet fever germs or by a combined method. Until recently the serum was unconcentrated and the urticarial rashes and serum sickness has been very distressing and frequent. It has now been concentrated and while they are less severe they are rather frequent.

Scarlet fever anti-toxin has been used in some hospitals more or less, routinely. It has been claimed that by its use the course of the disease is shortened and complications are lessened. This is debatable. It is very doubtful whether complications are less frequent. Its value in overcoming toxemia early in the disease is rather well established. It should be given during the first three days of the disease to get the best results. Its use is indicated when the attack is attended with high fever, delirium and other signs of severe toxemia. In some cases the temperature falls rapidly and constitutional symptoms are greatly improved. In other cases there is a temporary improvement and a second dose is indicated, if the temperature goes up again. It will, however, not save all the severe cases, whether they are purely toxic or when streptococcic bacteriemia is present. In fact all the bacteriemia cases succumb.

A physician in Warsaw whom the writer knows writes that the death rate in this city,

which is normally about 20%, has been reduced to 12% by the use of serum. Scarlet fever anti-toxin is undoubtedly of great value in selected cases. Because it is not necessary in the ordinary case and because of its expense, it should be reserved for the more serious cases.

Passive immunity against Scarlet fever is claimed to have been obtained by the injection of convalescent human serum and scarlet fever anti-toxin. At the best the protection is short lived and the value of either method is questionable. The frequency and severity of the serum reactions has also discouraged its use. However, the rather severe serum reactions will, without doubt, be overcome, just as they were in the case of diphtheria anti-toxin.

SOCIETIES

PROVIDENCE MEDICAL ASSOCIATION

The regular monthly meeting of the Providence Medical Association was called to order by the President, Dr. Edward S. Brackett Monday evening, March 5, 1928 at 8:45 o'clock. The records of the last meeting were read and approved.

Dr. Hawkes read an obituary on Dr. W. G. Dwinell. It was voted that this be spread on the records and a copy sent to the family. A letter was read from the Rhode Island Tuberculosis League announcing a campaign and it was voted that the Association endorse this. A letter from the Dayton Chamber of Commerce protesting a bill recently presented at Washington to stop the government printing of stamped envelopes was referred to Dr. Mowry who is writing a letter. Dr. J. B. McKenna read an obituary on Dr. Edward F. McKenna and it was voted that this be sent to the family and a copy spread on the records.

Dr. Guy Wells read the first paper of the evening on Hypothyroidism. After a short reference to the history he described a typical case. A much larger group do not complain of the typical symptoms or show the typical signs but have a low metabolic rate and usually run a sub-

normal temperature. A number of case histories were given. The figures of metabolic rates on a series of hospital and office cases were shown. The treatment is the giving of thyroid checked by metabolic rates and a maintenance dose can be determined.

The second paper was on General Management of Thyroid Conditions by Dr. Frank H. Lahey of Boston. He discussed the clinical phases. The unit of the thyroid is the acinus surrounded by epithelial cells. A normal thyroid has a small amount of colloid in the acinus. The colloid is probably not secretion. In the endemic goitre the amount of colloid is large. The end stage downward is the nodular goitre where many acini are ruptured together. In the upper stage the epithelium enlarges and the colloid in the acini decreases. Involution is downward. Hyperplasia upwards. Adolescent goitre with visible isthmus does not need treatment here by the sea where there is plenty of iodine. Graves disease or exophthalmic goitre is an over activity of whole thyroid gland. Often there is no previous goitre. Toxic adenomata or second hyperthyroidism is over activity of previous existing adenoma. It usually occurs after 40 years of age. Exophthalmic goitre usually occurs before 40 years of age. Four-fifths to five-sixths of exophthalmic goitre must be removed to cure. Removal of the adenomata will cure *them*. Goitre, exophthalmos, tachycardia and tremors may all be absent in hyperthyroidism. Fixation of eye or stare is practically always present. True active hyperthyroidism does not have normal metabolic rate. No drug will reduce the basal metabolism in toxic goitre. Rest, X-ray and radium may do this but they are uncertain. Any toxic case is in danger of a crisis and death. Iodine is of value in getting the patient ready for operation and in the crises but the improvement lasts a few weeks and then the trouble recurs. Adenomata are always in danger of becoming malignant and then are practically hopeless. The operative danger is very slight. Thyroiditis is hard and tender and should be carefully watched as it frequently results in myxedema. Following Dr. Lahey showed a series of slides illustrating cases and different gland conditions. The papers were discussed by Doctors Perkins, C. O. Cooke, Fulton, Cameron, Brackett and Lahey. The meeting

adjourned at 11:05 P. M. with a rising vote of thanks to Dr. Lahey. Attendance 134.

Collation was served.

Respectfully submitted

PETER PINEO CHASE
Secretary.

The regular monthly meeting of the Providence Medical Association was called to order by the President, Monday evening, April 2, 1928 at 8:45 o'clock. The records of the last meeting were read and approved. The standing committee having approved their applications the following were elected to membership:—Catherine E. O'Meara and Egbert V. Conrad. A letter from J. Edwards Kerney regarding the Blue Book Directory of the Physicians of Providence was read and laid on the table. Dr. McLeod of Newport, President of the State Society was a visitor at the meeting and addressed the members.

The first paper of the evening was read by Dr. Julius G. Kelley on "Blood Transfusion." He spoke first on iso agglutination and the recognition of, four groups with their characteristics giving the table of reactions. He then gave the technique of grouping. The donor should be carefully studied to eliminate all disease. The symptoms following transfusion of incompatible blood should be quickly recognized and transfusion stopped. A description of an actual hemolytic reaction was given. The commonest reaction is due to the instability of the blood when removed from the body so efficiency of technique is valuable. Transfusion is indicated in severe hemorrhages, secondary anemia, chronic sepsis and all primary blood diseases except possibly pernicious anemia. A short description of the principal techniques for transfusion with and without anti-coagulents was given and a discussion of 41 cases at the Rhode Island Hospital during the past year. The paper was discussed by Drs. Burgess, McCann and Kelley.

The second paper by Dr. H. A. Lawson was on the "Treatment of Pernicious Anemia by Liver and Extracts or Fractions of Liver." Its efficacy is established beyond doubt. The amount of liver given has been as high as 360 grams but these large amounts frequently cause anorexia

or vomiting. Raw pulp is usually taken. Meats, fats and vegetables are given in large amounts but carbohydrates are kept low. Reticulated or young cells are seen to increase quickly after this diet is started. Red blood cells and hemoglobin increase somewhat later as do the blood platelets. The lower the blood count the greater the rise in reticulated cells after liver. A number of lantern slides illustrated these points. The patient's general condition improves with these changes. Achlorhydria persists however, as do many nervous symptoms. As far as is now known the patient must continue a liver diet although not in such large amounts. Dr. Lawson then gave an account of the production in the laboratory of the small fraction of liver substance which contains the active principle. Questions were asked by Drs. Brackett and Jones.

Meeting adjourned at 10:40 P. M. Attendance 109. Collation was served.

Respectfully submitted

PETER PINEO CHASE
Secretary

HOSPITALS

THE MEMORIAL HOSPITAL

The following is a copy of the minutes of the Memorial Hospital Staff meeting held April 5, 1928:

"Meeting called to order by President Wheaton at 9:22 P. M. A motion approving the action of the President in appointing Drs. Holt, Henry and Sprague to attend the funeral of Dr. L. J. Gilroy was made and passed.

The President appointed a Committee on resolutions with reference to the death of Dr. L. J. Gilroy—Drs. Hammond, Sweet and Henry—and instructed the Secretary to notify them. These resolutions to be prepared and presented at the next regular meeting of the Staff.

Motion made, seconded and passed approving the action of the Treasurer in sending a wreath of flowers to the funeral of Dr. Gilroy, in the sum of ten dollars (\$10.00).

Dr. D. L. Richardson spoke interestingly on "Latest Developments on Diagnosis and Treat-

ment of Scarlet Fever." The discussion was led by Drs. Holt, Winkler and Bates.

The President extended a vote of thanks to Dr. Richardson for his very interesting paper.

Meeting adjourned at 10:43 P. M.

STANLEY SPRAGUE, M.D.

Secretary, pro. tem.

OBITUARY

Dr. William Grout Dwinell died in Providence, September 21, 1927, and was buried in the cemetery in East St. Johnsbury, Vermont.

He was born in St. Johnsbury, June 9, 1878, the son of Charles H. and Mary Grout Dwinell. Through his mother's side of the family, he was related to several men whose names stand out prominently in the records of Vermont State. One uncle, Josiah Grout, was a former Governor of Vermont, and another, William Grout, was for eighteen years a Congressman, and also a General in the Union Army, in the Civil War. A cousin, Aaron Grout, recently resigned as Secretary of State, in Vermont.

He obtained his early education at St. Johnsbury Academy, which President Coolidge attended, and later at the High School in Malden, Massachusetts. Soon after leaving High School, he became possessed of an irresistible desire to pursue the study and practice of medicine. As an example of his persistence and determination of mind, he prepared himself, practically through his own efforts, for admission to the Harvard Medical School. He entered with, and graduated in, the class of 1901. His rank, during the four years of his Medical School course, placed him among the highest of his class, which numbered over one hundred students. After graduation, he served his Internship at the Boston City Hospital. After that, for a while, he was an assistant to the Superintendent, at the same institution.

Dr. Dwinell was first engaged in the general practice of medicine and surgery, with an office on Benefit St., in the block opposite the foot of George St. Later, he moved to Pawtucket.

Soon after Dr. Wright of England presented to the world the advantages of vaccine therapy, Dr. Dwinell decided to give up general practice

and to prepare himself to follow one of the scientific branches of the medical profession, in which he was much more interested. Consequently, he spent several months of close application in the laboratory at the Boston City Hospital, where he learned the methods of producing the various vaccines, and their therapeutic administration. He returned to Providence, after the completion of his research work, and opened his laboratory-office first on Greene St. and later on Jackson St. For several years, he did a flourishing business and was the recognized authority in Rhode Island in vaccine work. During the years 1911 to 1915, he held the position of Immunist, at the St. Joseph's Hospital.

When the enthusiasm of the Medical profession over vaccine therapy began to wane, Dr. Dwinell once more turned his attention to one of the newer and more scientific branches of his calling. He withdrew for another several months, this time pursuing his studies in the laboratory of the Peter Bent Brigham Hospital, in Boston. Here he fitted himself in bio-chemistry, for a practice based on Chemistry, Food, Urine, Blood, and Metabolic rate, specializing in nutritional diseases. On returning to Providence, he opened his laboratory-office first on Thayer St. and later, on Hope St., opposite the Hope Reservoir. Again he must be accredited a pioneer in his special line of work in Providence, Rhode Island; this time in a branch that is steadily increasing in usefulness to patients and physicians alike, and also in popularity.

When the United States entered the World War, Dr. Dwinell applied for and received his commission in 1917, as First Lieutenant in the Medical Corps. He was assigned to Camp Dodge, Iowa, where he became Chief of Laboratory, at the Base Hospital, and was promoted to the rank of Major. Here he remained during the period of the war, and became conspicuous for the special study he made of the "Flu" epidemic, and its complication, pneumonia, as it occurred at Camp Dodge. His thesis, "A Laboratory Report on Epidemic Pneumonia," was published in the American Journal of the Medical Sciences, for August 1919.

Dr. Dwinell was always a most affable and companionable man. Although quiet and rather retiring in manner, he nevertheless had a keen

sense of humor. He was thoroughly engrossed in his special lines of work and spent hours of the day, often well into the night, in working out the many problems that confronted him in his laboratory.

It was his intense enthusiasm for his work and his interest in his cases, that drew many patients to him from all over the State. So constantly did he apply himself to his specialty, that he seldom took time for recreation or vacations.

At the time of his death, he was engaged in preparing for publication, a paper based on one thousand cases in his blood chemistry work. An example of his affectionate and sympathetic disposition, was shown in the care and devotion he displayed toward his aged mother, during the latter years of her life.

Dr. Dwinell was taken rather suddenly ill, on February 14, 1927. On examination, a small mass was found attached to his rectum, which proved to be malignant. Both his attending surgeon, and a consultant and classmate from Boston, hoped that it might be completely removed, without subsequent recurrence. The operation was performed, but a second one was necessary later, to give him some degree of comfort. The last few weeks of his life were most distressing to him, both in mind and body, for he thought of his work still unfulfilled, while his body was racked with the pain that he suffered. But through all this trying period, while he grew thinner and weaker and realized just where his condition was leading him, he always appeared as pleasant and uncomplaining, as the unfortunate circumstances would permit.

In his death, the Medical fraternity of Providence and Rhode Island has lost one of its most enthusiastic, and at the same time, one of its most scientifically trained members. He will be mourned by a large number of patients and friends.

During the twenty-five years of his practice, he contributed a number of most instructive papers to the various medical magazines. As frequently happens, his ability was undoubtedly appreciated more, beyond the limits of his own City and State.

On April 11, 1914, Dr. Dwinell married Miss Harriet A. Fish, of Providence, who survives him. He is also survived by a nephew, William

Grout Dwinell, 2d, and by a niece, Miss Ruth Dwinell, both of Providence; by Mrs. Charles Johnson of Hartford, Conn., another niece, and by a brother, Charles H. Dwinell. Dr. Dwinell had no children.

He was a member of the Masonic fraternity, the Harvard Club of Rhode Island, the Metacomet Golf Club, the Providence Medical Association, the Rhode Island Medical Society, and the American Medical Association.

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Dr. Francis McKenna died March 23, 1927. He was born in Providence in 1880. After passing through the city schools, he entered Brown University from which he graduated in 1905. He then entered Harvard Medical School, graduating in 1909. After serving an internship at the Lynn General Hospital, he returned to Providence to engage in general practice.

Dr. McKenna spent his life in service to others. Although suffering from a chronic malady, he kept at his work with indomitable energy when prudence and inclination would have dictated rest.

He had a big, warm generous nature, but these qualities sometimes when unrecognized because of a modest, undemonstrative and reserved disposition.

We are impressed by his ardent love for his profession, by his entire devotion to its highest ideals and by the singular purity and nobility of his character.

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BOOK REVIEWS

INTERNATIONAL CLINICS

Volume III. Thirty-seventh Series, 1927

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This volume contains numerous important articles as *Diagnosis and Treatment* by various authorities both of this country and of Germany.

There is an extensive discussion on Pneumococcus Meningitis and Endo Carditis.

Subjects on Surgery, Obstetrics, and Neurology are given some prominence.

There is a well written brief history on Greek Medicine by John R. Oliver, M.D., of Baltimore, Maryland.

The volume ends with a lengthy discussion on Post-Graduate Study by Henry Cuttell of Philadelphia.

INTERNATIONAL CLINICS

Volume IV, Thirty-seventh Series, 1927.

PHILADELPHIA AND LONDON

J. B. LIPPINCOTT Co., *Publishers*

At the beginning of this volume the various subjects discussed by various European authors in the Travel Clinics are given considerable prominence.

They are of interest and of practical value to the general practitioner.

Subjects on Diagnosis and Treatment, Medicine and Surgery are being discussed by various prominent clinicians.

There is an interesting treatise on Medical History "The Middle Ages" by John R. Oliver M.D., of Baltimore, Md.

The volume ends with the study of Post-Graduate work by Astley Ashhurst, M.D., and H. Cat-tel, M.D., both of Philadelphia.

MISCELLANEOUS

TOBACCO

Nearly every community in the world is involved, in some way, in the tobacco problem. In 1921 the people of the United States spent approximately \$1,500,000,000 on tobacco; many persons, who feel that there is a moral principle involved in human consumption of tobacco, have joined organizations for mass attacks against the practice. In some localities legal strictures have limited the sale of the plant in any form.

A session of the International Antitobacco League was held in Prague in 1927. Recently Prof. W. E. Dixon of Cambridge University delivered, in England, the Norman Kerr lecture, on

"The Tobacco Habit." In the United States, a report of the Committee to Study the Tobacco Problem has just been published in book form. Unfortunately, the reaching of helpful conclusions after reading these and other articles is difficult. Presumably the reason is that the facts are difficult to establish. Many variables confuse investigators. A given set of determinations may not apply in another investigation. Tobacco may be snuffed, chewed or smoked, and, if smoked, it may be in the form of cigaret or cigar, or may be stuffed into a pipe. The amounts of nicotine in smoke vary with the thickness of cigar or cigaret; with the dampness, the tightness of packing or rolling and with the rapidity of combustion of the tobacco. In pipe smoking, the amount of nicotine at the mouthpiece is affected by the length of the stem and the presence or absence of a filter or catalyzer. Samples of tobacco are not more alike than are the susceptibilities of individuals. The amount of nicotine in the smoke may not bear any theoretically predictable relation to the amount in the tobacco. Furthermore, although the main effect of tobacco smoke is due to nicotine, other substances, such as ammonia gas, pyridine, pyridine derivatives and carbon monoxide, must be taken into account. Controlled conditions, therefore—one of the pre-requisites of scientific work—are difficult to produce.

Nevertheless, it is known that nicotine causes stimulation, followed by depression, of both the central and the autonomic nervous systems. Because of its influence on the autonomic nervous system, tobacco modifies motion and secretion of the alimentary tract. Smoking has a demonstrable effect on pulse rate, blood pressure and the efficiency of the heart.

Nearly everything that comes in contact with the body, however, modifies its functions in some manner. What the world wants to know about tobacco is whether it is harmful, harmless or beneficial. To answer this question, it is necessary to avoid reasoning, without reservation, from the analogy of nicotine injections in animals to the effect of tobacco on man. Clinical opinion must not be confused with clinical fact, or any kind of opinion with experimental demonstration. That much remains unknown must be recognized. For instance, the role of tobacco is causing certain circulatory disorders and possibly sudden

death in some persons remains to be investigated further. From the present available evidence the main conclusions that are justified seem to be the following: The use of tobacco even in moderate quantities seems to lower the efficiency of the heart under strain. This may be classed as a harmful effect. Taken moderately, tobacco tends to stabilize responses to sensory stimuli. This may be classed as a beneficial effect. Other effects depend on individual susceptibility, kind and condition of tobacco, method of taking it and amount consumed. Even tobacco amblyopia seems not to bear any relation to excessive use of the plant. Until more is known, the only general rule that can be given applies to those who feel ill effects from tobacco. Obviously, such persons should be guided by the advice of physicians who have made thorough investigations of their particular cases.—*Journal, A. M. A.*

ACTION OF ULTRAVIOLET IRRADIATION ON BACTERICIDAL PROPERTY OF BLOOD

Continuous daily quartz lamp irradiations for more than three weeks with routine exposure, time and distance lead, in the majority of all cases examined by J. E. Gonce, Madison, Wis., and Karl Kassowitz, Wauwatosa-Milwaukee, Wis. (*Journal A. M. A.*, January 28, 1928), to a lowered bactericidal property of the blood. Completely normal persons free from any infection are apt to show improved bactericidal properties after continuous ultraviolet irradiations; those suffering from chronic infections and post-infectious conditions after daily quartz lamp treatments are apt to show a drop in the bactericidal property of the blood. Normal rabbits tested show in all cases a very favorable response to daily ultraviolet irradiation. The increased or reduced bactericidal property of the blood after ultraviolet irradiation seems to depend largely on the leukocytic reaction of the body. An increased number of white cells, especially of polymorphonuclears, is associated with improved killing

power for cocci; a leukopenia is associated with a lowered killing power for cocci. A comparison between the number of leukocytes and the bactericidal property of the blood can be made in the same individual only at different times. Two different individuals may show the same numbers of leukocytes and the opposite antibacterial response. Therefore, it must be assumed that there is a comparatively high constancy in the antibacterial function of the single white cell in one individual, but differences in the leukocytic ability of different individuals. In the matter of treatment, the response of the organism should be controlled by the bactericidal test or at least by the leukocytic reaction of the blood. This white blood count should not be made immediately, but instead twenty-four hours after a light treatment and not less than once a week. The borderline between the therapeutic and the toxic dose of ultraviolet rays with regard to immunity probably varies in each individual case.

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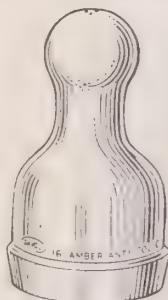
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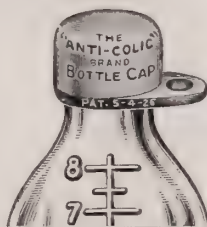
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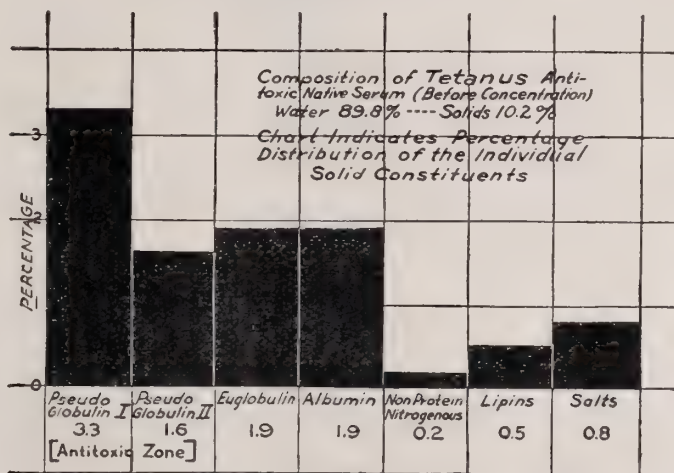
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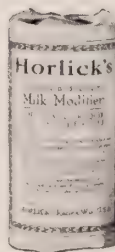
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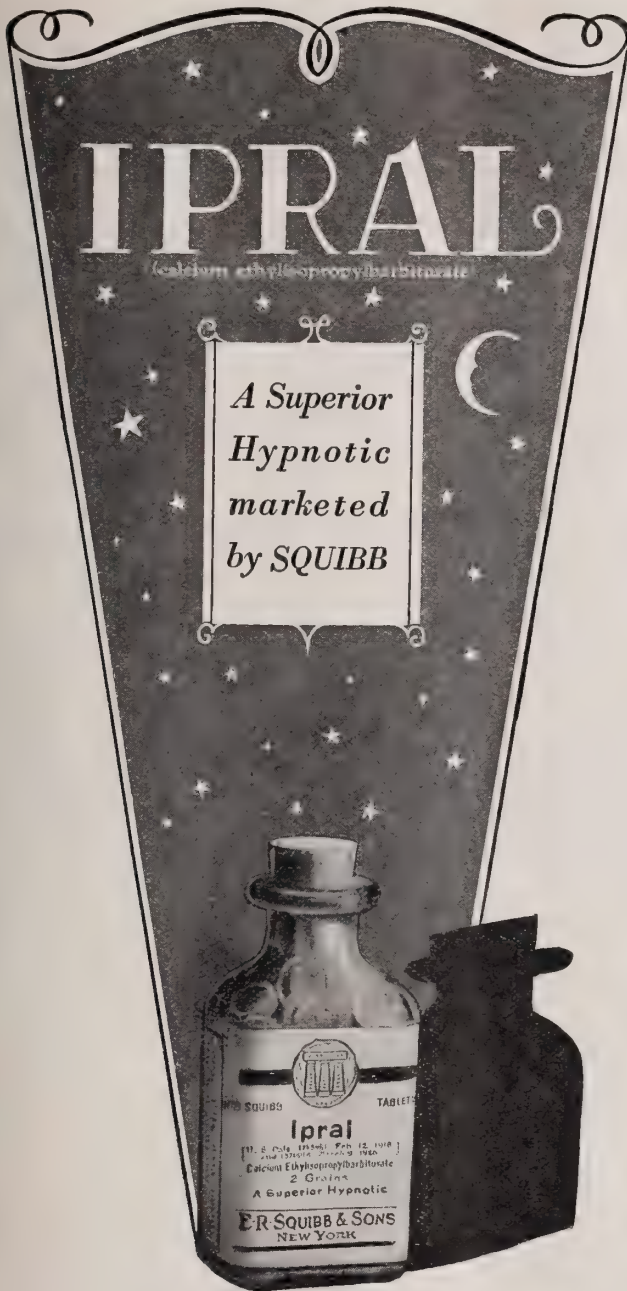
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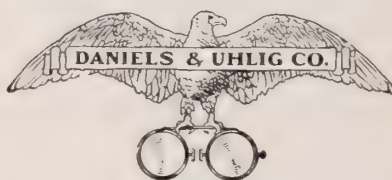
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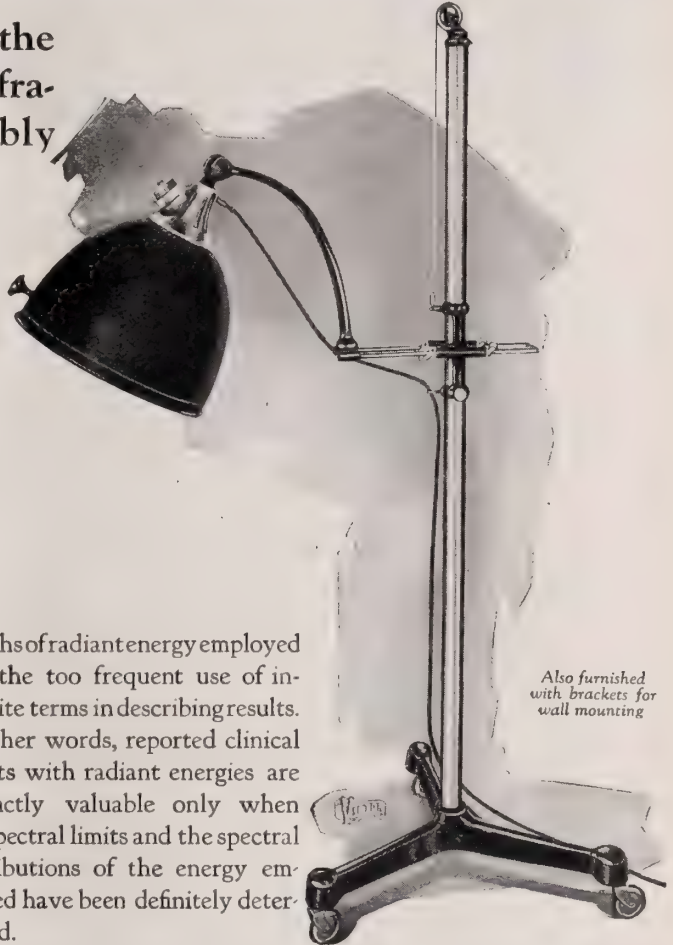
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ORIGINAL ARTICLES

FOCAL INFECTION AND ITS RELATION TO OPHTHALMOLOGY*

By FRANK J. McCABE, M.D.
PROVIDENCE, R. I.

Systematic or general disease due to local infection is a conception as old as medical knowledge itself. Focal infection, however, is broader in its application than is the thought expressed by the term 'surgical sepsis.'

During the past twenty years, a new interest has been aroused in regard to focal infection as an etiological factor in local and general diseases. The renewed interest and increased knowledge of this subject has been developed by the application and deep study of such brilliant minds as those of Rosenow, Billings, W. H. Porter and others.

A focus of infection may be defined as a circumscribed area of tissue infected with pathogenic micro-organisms. These foci may be primary or secondary; the former are usually located in tissue which connects with a mucous or cutaneous surface. Secondary foci are the direct result of infections from other foci through contiguous tissue or from a distance, through the blood or lymph channels. Primary foci may be located anywhere in the body, but infections of the teeth and contiguous structures, the faucial tonsils, the para-nasal sinuses and the gastro-intestinal tract seem to be most common. Other areas of infection are the bronchi, lungs, auxiliary organs of digestion, and the genito-urinary organs.

Infected lymph nodes which are secondary to the primary foci, may be included as additional sources of local infection. This secondary lymph node infection may persist after the etiological or primary focus has been removed or has disappeared spontaneously. Other secondary foci may appear in various tissues as a part of the general or local disease. The infection may be carried by way of the blood stream in the form of emboli. The

severity of the infection is dependent upon the virulence and the specific pathogenic affinity of these bacteria and the character of the tissue and the function of the organ involved. The specific tissue reaction consists of a local inflammation with endothelial proliferation of vessel walls; hemorrhage into the surrounding tissue, positive chemotaxis with resulting increase in leucocytes and plasma cells in the infected area, or of a fibrinoplastic exudate. The infection may be spread by the lymph channels thus resulting in the invasion of the glands with the possible formation of a circumscribed abscess. It is now known that focal infection may cause anaphylaxis, the bacterial protein of the pathogenic micro-organisms sensitizing the body cells, thus producing bronchial spasm, urticaria, etc.

With the greater knowledge of focal infection, ophthalmologists are now better able to cope with eye conditions, which are known to be secondary to a focus elsewhere in the body. The most common infectious process is probably that involving the uveal tract, i. e., the iris, ciliary body and choroid. Other lesions noted are, affections of the second, third, fourth and sixth cranial nerves as well as inflammatory conditions of the cornea and retina and hemorrhages of retinal vessels.

Regarding the relative frequency of location of infectious foci, interesting information is found in the report of the very careful studies of Irons and Brown, on the etiology of iritis (and the same etiology would hold for the conditions just referred to above). This report is based upon a thorough study of two hundred cases of iritis: I shall read a statistical summary of their report:—

Infections	Alone	With Other Infections	Total
Syphilis	12	26	38
Gonococcal infection	8	2	10
T. B.	8	0	8
Dental infection	12	15	27
Tonsillar infection	26	27	53
Sinus infection	1	3	4
Genito-urinary (non-venereal)	6	0	6

*Read before the Providence Medical Association, Dec. 5, 1927.

Other infections	3	0	3
No infection found			3
Combined infections... ..		41	41
Undetermined		7	7
			—
Total			200

According to these figures, infections of the teeth, tonsils and sinuses accounted for 42% of the cases. You will note that these authors found twice as many tonsillar infections as there were dental. My own experience would lead me to believe that there have been nearly twice as many dental as tonsillar foci. It is interesting to learn that in this series of cases there were but 19% which were due to syphilis. I appreciate that it is hazardous to attempt to draw definite conclusions from the study of so small a number of cases as two hundred and yet the picture shown by the figures which have been read to you, is sufficient, at least, to give us a basis for discussion.

Since the incidence of foci, in the teeth, tonsils and accessory sinuses is variously estimated to be between forty and seventy-five per cent, the question of "why," is a pertinent one. According to Gaudet, the reason is, because these infections take place along the beginning pathways of the respiratory and digestive functions. In the performance of the respiratory functions, which take place both through the nose and the mouth, there enters air, moisture, heat, smoke, dust, cold gases, irritating substances and bacteria, infective and non-infective, to which are exposed the mucous membranes lining these passages. There may exist, also, anatomical, mechanical and traumatic changes in the nasal and pharyngeal passages which interfere with proper ventilation and drainage of these areas. In the performance of the digestive function, there is taken into the mouth, all sorts of food, raw and cooked, uncontaminated and contaminated, hot and cold;—these often laden with pathogenic and non-pathogenic bacteria. These substances come in contact with all portions of the buccal cavity, including the teeth, gums, tongue, soft palate, tonsils, pharynx, etc. In other words, the greatest amount of substances necessary for the sustenance of life and the performance of the bodily functions, enter by way of the nasal and buccal cavities with a consequent entrance of much that is a direct cause of disease and infection.

Barry, writing in the *Journal* of the Medical Society of New Jersey, states that non-vital teeth are unquestionably a menace to the individual because recent microscopic studies have proven that most teeth have minute, collateral canals leading from the main pulp canal and forming a meshwork at the apex of the tooth. It is practically impossible to fill or sterilize these minute areas and yet they harbor millions of bacteria. He also says that many of these teeth present no areas of infection roentgenographically and yet, upon culture, they show virulent infections in 85 to 90 per cent of cases. This explains why so many retained de-vitalized teeth eventually cause alveolar abscess. Again, Barry says, that a thorough examination, in order to make a correct diagnosis, presupposes an initial roentgenographic examination because no dentist, without the aid of the X-ray, can assure the patient or the physician that possible contributory infections in the oral cavity have been eliminated. These foci are often the most dangerous of lesions because they develop no symptoms, are closed off by bony structures with little or no expansion and cause constant absorption.

The faucial tonsils being rich in lymphoid tissue, consisting of folds and crypts, are fertile fields for infection. It is said that more than 90% of all tonsils which have been carefully examined, showed pathological changes. Cultures taken from these tonsils have shown the various strains of strepto-coccus, such as: the mucosus, viridans and hemolyticus, the micro-coccus-catarrhalis, the different types of pneumococcus, the bacillus mucosus capsulatus, the influenza bacillus, the klebs-Loeffler bacillus, and many other pathogenic micro-organisms. Many children have a hyperplasia of the lymphoid tissue which goes to make up Waldeyer's ring. These are an ever-present source of infection. In adult life, small faucial tonsils may look innocent because of a smooth covering of mucous membrane but a careful examination may reveal infected crypts or even a frank abscess. Stumps of tonsillar tissue may contain infected crypts sealed over by post-operative scar.

We have been taught to believe that the gastrointestinal tract is a prolific source of general systemic infection and I am still of the opinion that such is true, in spite of the fact that this source was not listed as a focus of infection in the report

of Irons and Brown and as against the opinion of Billings, as expressed in his lectures on focal infection, in which he states in effect, that while many in the profession believe that stasis of the intestinal contents, due to constipation, congenital defects or acquired morbid anatomical conditions favor the presence of pathogenic bacteria, thus causing toxemia and systemic disease, and that there may be some truth in this belief, nevertheless, he is of the opinion that the pathogenic micro-organisms which enter the intestinal canal and remain there as infectious organisms, gain admittance by being swallowed, thus infecting the organs in the buccal cavity. He is inclined to the thought that appendicitis, cholecystitis and other local infections of the intestinal tract, are transmitted hematogenously from foci in the mouth and throat. But few of the sources of infection have been stressed. However, keeping in mind that every part of the body is a potential source, the discussion could be carried on indefinitely.

What has been said about focal infection and the various conditions of the eye, resulting therefrom, applies equally well to morbid conditions in other organs.

Unquestionably, it is the duty of every physician, having under his care patients whose ills can in any way be attributed to focal infection, to make a most thorough physical examination, seeking whatever aid he deems necessary, whether it be from colleagues engaged in the special fields or from examination of tissue, secretion, etc., by the laboratory men.

If the search is thorough and the source or sources are completely eliminated, we shall have less reason to resort to the terms, 'idiopathic' or 'rheumatic diathesis,' in explaining the etiology of certain chronic diseases.

In closing, let me say that I make no pretense of having said anything new. My only reason for having chosen the subject of focal infection was to emphasize the important part played by it in explaining the etiology as well as the chronicity of many bodily ills.

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QUARANTINE OF SCARLET FEVER GOVERNED BY THROAT CULTURES*

By EDWARD V. MURPHY, M. D.
HEALTH COMMISSION OF NEWPORT

The purpose of this paper is not to speak of the treatment of Scarlet Fever or of the clinical diagnosis, but more especially of bringing to your attention the results of the bacteriological side of the question in the diagnosis of the disease, and also our dependence upon the same method in the discharge of the Scarlet Fever cases.

As you know, the etiological factor in Scarlet Fever has been a question for a good many years, but within the last few years, particularly after the experiments of the Doctors Dick, it seems to be generally conceded that the cause of Scarlet Fever is unquestionably the streptococcus hemolyticus scarletina. And it is upon the basis of this discovery that the Health Department of the City of Newport has been depending in a great measure for the discharge of the cases of Scarlet Fever that have been quarantined at the Hospital.

We might say, incidentally, that the Health Department does not believe in the efficiency of quarantine at home, and we have encouraged all cases of a communicable nature to be sent to the Hospital. We find the results of that method are far more satisfactory than when cases remain at home. Inasmuch as the expenses are borne by the City, we are aided in inducing parents to send their children to the Hospital for treatment and observation.

Our partial dependence upon the bacteriological finding of the throat cultures has been of aid to us in diagnosis, in the quarantining of the cases; helps us to decide in doubtful cases; and the release from quarantine when the patient is apparently well.

*Read before the Rhode Island Medical Society December 1, 1927.

The agreement that the s. h. s. is the cause of the disease has aided us who are doing health work, in reducing the period of quarantine. We all remember the time when it was believed that the exfoliated skin contained the germ that produced the disease, and how patients were kept under quarantine for weeks upon weeks, until every shred of skin that promised to exfoliate was removed. We now have no fear about exfoliating skin, and that in itself has reduced the period of quarantine, and with it, there has been an improvement in the economic side of the question.

Not the least important part of this method of handling the cases is the reduction in number of "return cases." This work has been done in the Health Department of the City of Newport for over two years, and in that period there have not been more than three return cases that could be attributed to the discharged case. Even return cases cannot always be attributed to the discharge case, because there is always the possibility in families where there are a number of children for one of the children to have an unrecognized case of Scarlet Fever, which could be very easily transmitted to another child, probably shortly after the discharged quarantined case. The natural tendency would be of course to blame the "return case" upon the discharged case, but that is not proof of the belief.

A number of epidemiologists although approving of the culture of cases ready for discharge, they have not done it. I have asked a number of experts in this line why, and their answers have not been convincing. One questioned the reliability of it; another felt it was not necessary, that the arbitrary confinement of four weeks was just as good as waiting for a culture from the throat being free from the organism. But in the course of our experience there was one occasion when the consulting epidemiologist insisted upon two negative cultures from the throat before admitting a sufferer from Scarlet Fever to return to his companions in school. That rather convinced us that perhaps way in back of the head of that expert he believed there was something of value in throat cultures in Scarlet Fever.

Unfortunately we do not have in scarlet fever throat cultures the same method of determining its virulence as we have in cases of diphtheria, and it may be that children are sometimes kept

in quarantine much longer than is absolutely necessary; but until we have a method of determining its virulence, or until we have evidence convincing us that the positive cases will not convey the disease, the Health Department feels that we should continue on this line of having throat cultures negative before discharge. (This has now been modified, and patients with negative throat cultures are discharged in 21 days, but positive throats cause patients to remain at least 4 weeks.)

There was one case of scarlet fever that we kept at home, and repeated throat cultures after three weeks were found to be positive, and continued so over a period of nearly two months.

Not the least important part of culture-taking is in diagnosis. We have all had the experience of seeing border line cases where the eruption is slight, where we are not sure about the throat, where there is a possibility of exposure of these cases to others. We have found in such suspects a negative throat with a doubtful eruption would point against scarlet fever, and so far we have not found the method getting us into trouble.

We have also adopted the plan of taking cultures at the end of three weeks. In scarlet fever cases where there has been no readily discoverable complication such as otitis media, or profuse secretions from the nose, or draining glands, or pus from any wound, we have in those cases cultured the throat, and finding them to be negative have discharged them from the hospital, and it is in the rarest case that we find a return patient.

In the majority of cases, we have reduced in this way the quarantine period to three weeks, thereby making a saving in time of twenty-five per cent., and in the course of the year this economy is noticeable.

Those who are engaged in health work, particularly in communicable diseases are convinced that medicine is not an exact science, and occasionally a case will arise that is not possible to explain. I have in mind one outstanding case of a young girl about seventeen who had the red-denied throat, inflamed tonsils, strawberry tongue, temperature, typical scarlet fever rash. Cultures from her throat proved negative. I suspected the media and had new media made—still negative. We then found it possible to make our blood agar from human blood, and again it proved to be

negative. She went through the regular course and she desquamated. Why we didn't get a positive culture in her case I have no way of explaining.

The surgeon in charge of the Naval Training Station reported a case of a young recruit who had a typical scarlet fever rash—temperature, vomiting, etc. The cultures from his throat were found to be negative for s. h. s. The boy had been recently vaccinated, and the vaccination area had reached the pustular stage, and culture from the pus revealed the s. h. s., and the conclusion of the surgeon was that the portal of entry was through the vaccination area.

Bacteriologists claim that there are so many and varied strains of the s. h. s. that it is impossible to isolate the exact strain that produces scarlet fever. That may be true, and I do not know enough about bacteriology to attempt defense of what we are doing. My only point is that when we can associate the clinical and the cultural symptoms of suspected cases of scarlet fever, we have in the finding of the s. h. s. an impressive factor the like of which has not been known up to the discoveries of the Doctors Dick.

Our experience in the Health Department has been convincing, and we see no reason to change our methods, and it has in our case particularly been more satisfactory than any other method of handling the scarlet fever question. The methods are simple, they can be adopted in any community of any size, and with a little experience in reading the plates an element has been added to the handling of the case that cannot fail to be of value.

The preparation of the media is very simple. After heating agar-agar, a small amount of blood is added while the agar-agar is warm, and then poured upon a sterile Petrie dish. We have been using sheep cells because of the inability to always secure human blood, and a check up has found that it is just as satisfactory.

I understand that certain departments of the State will furnish these prepared plates for those who might be interested in this work, and I feel sure that when this method I have tried to outline is adopted it will give you a confidence in the diagnosis of doubtful scarlet fever cases that you have not experienced before. If nothing else was gained, this one fact justifies the adoption of this method.

ANNOUNCEMENT

(By request)

CHICAGO'S GREATEST RADIOLOGICAL CONVENTION

The Radiological Society of North America will hold its fourteenth Annual Convention in Chicago, December 3rd to 7th, inclusive, 1928. The Drake Hotel, Lake Shore Drive and North Michigan Avenue, has been selected as the headquarters. We are assured of ample accommodations and exceptionally reasonable rates and of the best and most efficient service.

Make your plans for this year include Chicago's greatest Radiological Convention. Every physician who is interested in this branch of Diagnosis and Therapy is welcome.

There are no registration fees, no additional expense. Plans are under way now to secure reduced transportation rates.

The Ladies' Local Reception Committee is making plans for the entertainment of all visiting ladies. These plans include theater parties, luncheons, shopping tours and sight-seeing trips, with generous hospitality extended to all visitors.

Much attention is being given to arranging for Scientific and Commercial Exhibits. These exhibits will afford a post-graduate course of instruction in nearly every branch of medical science. Clinics covering radiological problems, as well as other branches of medicine, will be given every day during the session. We are assured by the Program Committee of an instructive and interesting scientific session, and a program upon which will appear representative men from all sections of this country and Europe.

Start to make your plans to attend now. This means you. Many papers on General Diagnosis and Therapy will be read and discussed during the Scientific Session.

Bring the wife and family to Chicago, the hub of the United States, with theaters, parks, boulevards, and shopping districts second to none.

The location of our headquarters at the Drake Hotel will be found especially convenient. Therefore, make your plans to attend this meeting now. You cannot afford to miss this 14th annual Session of the Radiological Society at Chicago. Reservations should be made early. Communicate with Chairman of hotels and lodgings committee, T. J. Ronayne, M.D., West Suburban Hospital, Chicago, Illinois, or direct with Drake Hotel, Chicago, Illinois.

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EDITORIALS

THE INVESTIGATION OF THE STATE INSTITUTIONS

Governor Case has acted very wisely in asking for a Commission to make an investigation of the affairs of the State Institutions. Rhode Island cannot afford to have a lack of public confidence in the management of those sick and unfortunate people who are committed to the State for its care. The members of this investigating committee, selected by the Governor, are citizens of the

highest type and the Governor by such appointments will win the approval of all right thinking residents of Rhode Island. Doctor James L. Wheaton, as the medical member, represents an exceedingly well qualified physician to carry out this work from the medical point of view.

It is to be hoped that the Commission will look upon the obligation imposed upon it as an opportunity for truly constructive service. The members of the medical profession know all too well the difficulties under which physicians serving the State work—small appropriations resulting in inadequate personnel, at times political pressure, and a partial absence of active and intelligent

public support makes these officials bear a tremendous load.

We feel sure that the whole matter will be looked upon from a broad point of view and that the responsibility of the citizens, the Legislature, the State Welfare Commission and the officials of the various Institutions will be clearly determined, and that a program can be laid before us that will restore public confidence and put Rhode Island in the forefront of the states in the care of its wards.

PHYSICIANS IN PUBLIC

From time to time matters that are of interest to the public and the physicians are discussed and studied by groups of the laity, who more or less represent and mould public opinion. Frequently these matters are of great importance to public health and can better be sponsored by an impartial public spirited organization than by a body of medical men.

However, the lack of technical information in a group of non-medical men may render ineffectual efforts in a good cause and may even do definite harm. Further, medical men in such bodies may even initiate interest in well deserving medical causes that would otherwise be disregarded.

Well organized bodies such as the Chamber of Commerce, Kiwanis and Rotarians afford good opportunity for the physician to perform public spirited service without injecting himself into the public eye or running the risk of criticism.

THE ANNUAL MEETING

One of the most interesting medical gatherings of local importance occurs during the month of June when the State Society holds its regular meeting which is followed by the annual dinner.

In the past this particular meeting has been a sort of gala day so far as programs and well known speakers were concerned because of the large attendance. Papers that have been read have done much to bring recent advancements in medicine to practitioners in Rhode Island who are unable to get to clinics in medical centers.

A valuable feature that is often overlooked, however, is association of the members with each

other, both before and after the dinner. Many new acquaintances are formed and often many new ideas are gained. Frequently foundations are laid for the carrying on of treatment of patients who have moved to other parts of the state. Above all the annual dinner leads to a fellowship and co-operation that is essential to the welfare and improvement in any medical society. Let us urge all who come to afternoon session to remain for the dinner.

ADDRESS BY DR. WILLIAM S. SHERMAN OF THE NEWPORT MEDICAL SOCIETY

"Honored guests and members of the Newport County Society, I greet you on behalf of the Newport Medical Society and welcome you to our county, 'the cradle of American Medicine,' and to Newport, a city rich in medical and surgical history for nearly three centuries.

"Here Robert Jeffreys was authorized to exercise 'the function of Chirurgie' in 1641, and John Cranston was 'by this Court styled and recorded Doctor of Phisick and Chirurgie' in 1664.

"Here too the first course of medical lectures in the colonies was delivered by Dr. William Hunter in 1756. Many of the highest medical commissions in the wars for our existence were held by men of this Town. Some of the earliest Hospitals were established here, and in 1798 one of the earliest Boards of Health. This library with its collection of medical books was established in 1747.

"The medical part of them was excellent; they were amply sufficient to give the medical student complete information, of all that was then known in the English language on Anatomy Surgery, Chemistry, and Botany, together with the history of drugs, and of their various preparation and uses, with the history of the progress of Physic from the time of Hippocrates. It sowed the seeds of the sciences, and rendered the inhabitants of Newport better read and inquisitive people than any other town in the British Colonies."

(Quoted from a diary of the Redwood family)

So it is fitting that we meet today in this ancient Redwood Library and Athenæum, probably the oldest library building in this country, a spot

hallowed by the memories of the profession for nearly two hundred years, an educational center before the founding of the great medical schools of Philadelphia, New York or Boston.

To this Temple of Learning and to our meeting we now welcome you whose mission is to Preserve Health, Prolong Life, and Soften Death.

The latter part of the eighteenth century has been termed the golden age of medicine in Newport. Dr. Benjamin Waterhouse alluding to this period says—"We doubt whether Boston, New York, or Philadelphia ever had, at one and the same time, two practitioners of physic and surgery, better educated and more skillful than these two gentlemen"—referring to Dr. Hunter and Dr. Halliburton.

Another who left the impress of his skill and conscientious investigation upon many pupils and followers is Dr. Jacques Gardette, a contemporary of Lafayette, who was commissioned as a surgeon in the French navy. An ardent patriot, of excellent education and charming manners, he arrived at Plymouth, early in January, 1778, as he himself expressed it for the sole object of fighting for the 'Holy Cause.'

After resigning from the French navy we find him in the little Army of the North, commanded by Lafayette, where he practiced general surgery and dental surgery, having studied the latter as a part of his profession of naval surgeon. When the French fleet and army arrived at Newport in 1780 he was induced to engage in practice in this town where he was well received and found considerable and congenial occupation.

We hear of him again in Providence in 1781-82, where the army was in winter quarters, and where besides his surgical service, he employed his knowledge of dental surgery in treating the officers and men. At that time he made the acquaintance of a young American surgeon, Josiah Flagg, also serving in the army, whom he initiated into the principles of dental surgery, in which Flagg took a lively interest.

We find Gardette in New York in 1783, where his limited knowledge of English proved a handicap to his success and it was not until the summer of 1784 and in Philadelphia that he attained the position which determined his permanent residence in the United States.

During that period he was befriended by Doctors Wistar, Shippen, Rush, and Kuhn. He con-

tinued in practice until 1829, when he returned to France and died at Bordeaux in August, 1831, at the age of seventy-five.

Jacques Gardette—Patriot—Naval Surgeon—Father of Dental Surgery in Our Country.

THE CONTRIBUTION OF PSYCHIATRY TO PROBLEM OF CRIME*

By WILLIAM A. WHITE, M.D.

SUPERINTENDENT OF THE ST. ELIZABETH'S HOSPITAL
WASHINGTON, D. C.

One has some interesting experiences in going from place to place on occasions of this sort. The other day I was speaking in Philadelphia and cannot help but recall the comment of one of the gentlemen who spoke there to such a body as this, who were interested in crime and crime prevention and he congratulated the group on their interest and the object of their work and incidentally said they could not accomplish it by enthusiasm alone.

I am going to call your attention to the story of Adam and Eve. In their time the human family consisted of only two people, Adam and Eve, and there was but one law, and this law was broken, and broken by all the people who existed at that time, so we might as well say there was a 100% record of criminality. Such a record as that perhaps gives some reason for certain theologians believing that man is born in sin, but I suspect that he either is stupid or particularly smart and believe in him as I shall soon show.

In the first place I think it is fairly evident in the minds of most people throughout the country who read the newspapers that our method of criminality, penal method and laws on which they are founded are failing for some reason or other. Perhaps it is not too much to say that our Family has fallen down some way in existing affairs, and one wonders what the trouble is. My idea, and I think my idea is held by many who have fathomed this difficulty, is that the law and penal system by conservation and ultra-conservation has lagged too far beyond thought. Whereupon it

*Read before the New England Society of Psychiatry, held in Providence, R. I., March 23, 1928.

remains that we need conservative elements in society. It happens in this instance that conservatism has been too prolonged, too wide a chasm in sentences forced upon us. While I have no idea that we can solve the question of crime offhand, but I am optimistic and I do believe that something can be done that is better than what is being done now, that it is not an adequate statement to say that since things have gone along so well for so long that there must be some good in them. There are very definite evidences that a change is being made along certain lines of endeavor. Take for instance this state of Rhode Island. In looking over statistics a short time ago I found that Rhode Island was one of the most backward states in the United States in the latter part of the last century in regard to caring for the mentally sick. Conditions were then lamentable in this respect. The hospitals did not have the confidence of the public. A great many seriously, mentally ill patients in the community could not be cared for. An example of what can be done if persistent effort is maintained year after year is now seen in the improvement of this condition as is shown by the announcement made tonight in regard to the new psychopathic ward. The same thing applies to crime. We are getting a line on the scientific idea as to what sort of individuals these people who commit crime are. I am quite convinced that the criminal, as he exists in the mind of the average individual, is simply a myth, and in their mind there is no such person. It is the same with the insane and the feeble-minded. Dr. Fernald gives this idea in one of his works when he says that a feeble-minded person is an absolute myth. For instance, a youngster may do something atrocious, and then be found to be feeble-minded, and so the ordinary person comes to think that all feeble-minded people are like that. Fundamentally, only a very few are like that, and, also, very few criminals are like the average person pictures them. What we hope to do is to turn this myth into reality, to try to understand what sort of an individual he is. By way of analogy, I would say: "If this country were being threatened with a serious pest that was destroying valuable property, what do you suppose would happen? First, the pest would be carefully studied, its whole life history from beginning to end would be gone into and it would be attacked only on a scientific basis of its life.

Yet, we attempt to deal with the problem of crime without any such information about the criminal, and we cannot be expected to make any impression on that problem until we have the necessary information. The legislation takes action on this, but increased punishment will not solve the problem. I have no faith in that method of procedure. It is an example of what usually happens when one is confronted by an unsolvable problem. They do something which they have been in the habit of doing before without realizing that conditions have changed. Personally, I do not look for any solution of the crime problem by increasing the sentences of serious offenders. Such a procedure, I believe, is doomed to failure.

Now let me tell you something about the crime situation as I have it in my mind. First, the most serious difficulty which we are confronted with is the attempt to find out what sort of individual the criminal is. The law makes no attempt to do this, but merely deals out a sentence without finding out the background of the criminal, and sentences him on the basis of the type of crime he has committed. This sort of thing is an absolute absurdity. Recently I was on a murder trial. A district attorney sentenced a man on the learnings and decisions of judges of a century ago, and asked the judge to be guided by those decisions. These conditions were made to apply to certain social conditions of those days, but are not applicable today. The law is apparently set on fixing a certain punishment for a certain act. I think the following story will illustrate more plainly than anything else the above facts:

A young man earning \$1,800 to \$2,000 a year married and had a family. They could just barely get along on it, but were living fairly comfortably, and making both ends meet. He was a perfectly respectable and good citizen. Suddenly there comes illness, there is need of doctors and hospitals, and expenses go on until he has no money left to get them. He knows nothing about the social agencies in his particular community to which he might go for information and assistance. In a fit of panic, he forges a check for \$100 in order to meet the emergency. He gets caught, and is sentenced to five years at State's Prison. What happens to his family? They are pauperized, forced to move to cheaper quarters in the tenement house district, the children are

taken out of school and forced to associate with children of the gutter, and so one can go on imagining what the future has in store for that family. They say a person is responsible for the natural consequences of his acts. Why, then, should a court bring more ruin than it can ever correct on a man? I don't quite see the logic of that sort of sentence. We want to think of the various individuals who compose society as so many assets. We want to think of them as investments by society, every individual an investment that society has made. It has brought that individual up, educated him, and prepared him for life in the hope that he may be a social asset. It is the worst kind of wastefulness to destroy that individual. They are learning in industrial systems not to discharge people without making inquiries into the difficulty to see what it is due to. Thus has mental hygiene entered into industrial plants. They are trying to see what the matter is with a person when his work is falling off; they are beginning by correcting the little things. We should hold the same sort of responsibility toward people who run counter to criminal law. We must not start off trying to understand the problem of crime with the idea we can fix it all up by a few laws that everyone must obey.

In regard to that myth, the criminal. Judges are beginning to appreciate this thing. There is a growing co-operation; they are beginning to see our point of view a little better; they are seeing the medical point of view a little better; and so lawyers and doctors are discussing this problem in a common way, and thus each one is understanding the other one better. Now they are talking in terms which each one understands. Out of all this comes the frank and honest statement from the judges that "We don't know what we are doing. If you psychiatrists can help us, then do it. We need help." The psychiatrist feels a little bit apprehensive because the demands are very great. We don't think that we have the solution of the crime problem. Not at all. The judge and the psychiatrist must work together. In that way they can do much better than they are doing now. One of the fundamental things in which the lawyer and doctor misunderstand each other is in reference to certain concepts which I think are basic; they are guilt, responsibility and punishment. The law talks very glibly about responsibility and irresponsibil-

ity and punishment. The doctor is never quite so sure about those things. Whether or not a human being is responsible cannot be judged by another person. You never can know enough about him.

I believe that we are still dealing with the criminal on the basis of getting even with a fellow who has done something to us that we do not like or approve of.

Did you ever go through a prison? There are good and bad prisons; some are better than others, and then, some are very bad. I doubt very much if the best of them would have any reformatory effect on the criminal. Some of the very old prison systems were based on a discipline that demanded absolute silence on the part of the prisoner. That, of course, is being rapidly done away with. You could never reform anyone in an atmosphere of that sort. Some prisoners are placed in solitary confinement. To my mind, conditions of prison life as they stand make rehabilitation of the criminal impossible. The very things are done that make it impossible to have any concrete results. I am going to give you another example, as I think examples always explain a point better.

I have in mind a man who is now over fifty years of age. When he was seventeen years old, he was living on a farm in a middle western state. His father died, leaving a widow and several children. The seventeen year old boy took charge of the farm, his mother and the children, and took over all of his father's debts, which he paid, educated the children, and in every way conducted himself in the way all orderly citizens should. This family adhered to a very rigid and strict religion. They were taught to read from the Bible by their mother. In the course of time, this boy married and had his own home and family, and he taught his own children as he had been taught. He was always a good citizen, even though all this responsibility had tended to make him a little odd, and he did not mix with the people. One day his nineteen year old daughter met a young man, with whom she went off and who assaulted her. Of course, the girl comes to her father with the story. The father becomes very much enraged, and starts off in a mad frenzy to find the young fellow. No one could stop him. He did find the boy, and killed him. He, naturally, was arrested and put in jail, and he could remember nothing of the incident

Would you put this man in the same category with others who, perhaps, had committed a similar act, but with an entirely different background and entirely different circumstances? If you are going to consider crime, consider both sides of the equation. Take into account all the past of the criminal, understand his education, social conditions, pry into the situation which caused the crime. If you are reading books of recent publication by psychiatrists that deal with these problems, you will find that they are dealing with it this way. It is absurd to raise the question of responsibility. One does not want to approach the question from that angle.

Law needs to be socialized. Psychiatry is socialized.

I am going to quote another example: A young fellow, seventeen or eighteen years of age, had been going to school, and got along very nicely up to the fifth grade, but did not do so well after that. People thought he was lazy. However, he was promoted, and he had a young teacher in this grade whom he pestered with a good deal of attention, until he finally proposed marriage. She became rather alarmed, and tried to avoid him. Finally, in due course of time, she became engaged to a man of her own choice. The boy did not like this at all, and came to her with an insistent, flat proposal—he wanted to marry her, and did not want to have her marry anyone else. She complained to the police, and caused the boy to be arrested. The only result of this was that the judge told the boy to leave the jurisdiction. Looking at it from our point of view, twenty-five years afterward, how stupid and how utterly useless this was. Of course the boy left the jurisdiction. He merely went into the next one, bought a gun, came back, and, meeting the teacher, shot her to death. I do not know whether a psychiatrist would have been able to avoid this or not, but at any rate, he would have made a different decision, and the psychiatrist is more often right than the court.

The primary function in a criminal court, after all, is to protect society. After society, then the individual. Therefore, to do this, the courts need to have agencies at work who are trained in this sort of thing. They should do it at a 100 per cent. rating, but at any rate, they could do it better than it is being done now.

The following are some of the recommendations on this phase as given by the American Psychiatric Association:

The first object should be the protection of society;

The second is the rehabilitation of the prisoner;

Detention, if rehabilitation is impossible;

Detection and prevention of objective.

The following are some recommendations that I would give:

When a case comes up in court, the psychiatrist should present the true story of the criminal's personality and social significance;

Try to salvage the prisoner, to protect society, and to be constructive and "save the pieces;"

Do not bring in a diagnosis of responsibility. That does not help;

The attachment of psychiatrists to courts, parole boards and prison staffs;

Commitment of offender to Board of Public Welfare for an indeterminate period of time for certain classes of crime;

Necessity of prison reform;

Remove prisons from political control.

As a closing suggestion, I think it would be a good idea if all district attorneys and judges were sent to prison for a while to live and get the atmosphere of prison life, and study the prisoner at right hand. We doctors, after we get through our course in medical school, are required to live in a hospital for a year so that we may know something about the way they are run, and learn more about the sick people who inhabit them.

CASES OF HYPERTENSION STUDIED WITH THE AID OF THE OPHTHALMOSCOPE*

By DR. HARRY MESSENGER
PROVIDENCE, R. I.

An extensive essay on the subject of Hypertension is not my purpose.

From a series of cases, I have chosen five, describing the appearance of the retinal arteries, Medical Diagnosis, urinalysis, blood-pressure, age and other significant findings. These cases are

*Read before the Providence Medical Association February 6th, 1928.

chosen particularly as illustrating that, regardless of complications or other factors, the retinal arteries give a very good index of the degree of arterio-sclerosis present in other organs as well as the retina.

The arteries in the retina are endarteries, corresponding in structure to endarteries in the pancreas, brain, kidney, etc. Exhaustive studies of the retinal arteries have been made, notably by R. Foster Moore, of London, an ophthalmologist, and O'Hare and Walker of Boston, internists. They, and others, have concluded that the essential lesion in Hypertension is a contraction of the smallest arterioles, and that this change takes place simultaneously all over the body; changes in the larger arteries come on, after a time, also in equal degrees in various parts of the body. As the retina is the only place, except the conjunctiva, where the progress of arterial disease can actually be seen, you readily appreciate that the condition of the retinal vessels as seen by the ophthalmoscope reveals also the condition of the arteries in the kidneys, brain, etc. With normal retinal arteries, you have normal renal arteries (but not necessarily normal kidneys).

The changes, as seen in the arteries undergoing sclerosis are as follows:

1. *White Reflex* from the arterial trunks, differentiated from the juvenile reflex which occurs up to thirty years of age and is merely a specular reflection of light from the smooth surface of the retina and is seen equally on the veins and arteries. In arterio-sclerosis, the reflex is seen only on the arteries.

2. *Increase of the White Reflex* until the arteries look like glistening wires, copper-wire if the caliber of the artery is still nearly normal, silver-wire if the caliber is much reduced.

3. *Narrowing*. A narrowing of the blood stream. There is a greater difference than normally between the size of the blood stream in the veins and the arteries.

4. *Pressure Effect*. A sclerotic artery crossing a vein displaces the vein causing, in appearance, a definite narrowing of the lumen of the vein and, if great, an apparent obliteration of the vein extending sometimes an appreciable distance to either side of the artery. I say "apparent" because most of the appearance is due to displacement of the vein rather than compression.

5. *Later Changes* are increased pallor of the artery, marked narrowing of the stream, a beaded appearance due to unevenness in caliber and tortuosities of the smaller branches.

6. *Still Later Changes* are small hemorrhages from terminal branches, small exudates and larger hemorrhages.

7. *Perivasculitis*. White strips along the vessels. Some vessels may be converted into white threads.

8. *Oedema of the Disc* with atrophy of the retina, a degeneration of the macula with deposits of pigment.

Blocking of the central artery or a branch may occur before these changes have advanced beyond the earlier stages.

Good vision may be retained even in well-advanced cases.

Choroidal Sclerosis present a different picture. The choroid is practically a plexus of vessels intercommunicating and forming almost an erectile tissue. Sclerosis produces a sharply outlined tessellation of the fundus, general pallor and a yellowish pallor of the disc. When hemorrhages occur, they are large and seen underlying the retinal vessels.

Sclerosis of the choroid is associated with peripheral sclerosis, sclerosis of the radials, temporals, etc. Occasionally, it is seen in one eye and not in the other, and sometimes only in one sector of the eye-ground. The retinal arteries always show the same degree of sclerosis in both eyes and throughout the retinae.

The first two cases which I shall describe are cases of Hypertension, complicated only by conditions which may be considered directly due to the increased arterial tension and sclerotic changes. Some of the results of Hypertension are Cardiac Hypertrophy, Nephritic changes, which have been known as Interstitial Nephritis, Cerebral Hemorrhage, Angina Pectoris, Congestive Failure of the Heart, Uremia and Diabetes. For a good description of Hypertension and an interesting conception of it, based largely on facts and partly on theory, I refer you to an article in the *Boston Medical and Surgical Journal*, July 28, 1927, by James P. O'Hare, entitled "The Development of Cardio-Vascular-Renal Disease." The third and fourth cases are of Hypertension of this type, with complications; and the last case, Hypertension not of this type.

First Case. Susie C—— from the Medical Out-Patient Department of the Rhode Island Hospital.

Age 70. Diagnosis: Hypertension
 Urinalysis: Specific Gravity: 1.008
 Albumen: Absent
 Sugar: Absent
 Sediment: No Casts
 Blood Pressure 230
 125

The retinal arteries show an increased reflex, narrowing of the blood-stream, marked pressure effect, tortuosities of the arteries and veins, no hemorrhages or exudates.

This is a case typical of the great group Hypertension. The age is above the average of the series; there is a low gravity urine, high systolic and diastolic blood pressure. Narrowing and marked pressure effect in the arteries show well-advanced changes in the arterial walls. "Tortuosities" is not a reliable sign, but goes with the high blood-pressure and marked thickening of the arterial wall as shown by the great pressure effect. Low gravity urine is an almost constant finding in these cases.

Second Case. Pedro M—— from the Medical Out-Patient Department of the Rhode Island Hospital.

Age 61. Diagnosis: Hypertension.
 Urinalysis: Specific Gravity: 1.019
 Albumen: Absent
 Sugar: Absent
 Sediment: No Casts
 Blood Pressure 190
 115

Pupils react to light and not to distance.

Retinal arteries are narrow. There is a beautiful silver-wire reflex and marked pressure-effect, slight tortuosities. No hemorrhages or exudates.

This man is nine years younger than the first patient but his case is perhaps more advanced. *Silver-wire* reflex means a very marked reflex indicating much new tissue in the arterial wall. He also has narrowing and marked pressure-effect where an artery crosses a vein. The urinary gravity is very rarely as high as 1.019 in these cases. The pupillary reaction to light but not to distance has nothing to do with Arterio-

sclerosis, but is an interesting sign common after Encephalitis, which he has had.

Third Case. Rosa D—— from the Medical Out-Patient Department of the Rhode Island Hospital.

Age 50. Diagnosis: Hypertension
 Auricular Fibrillation
 Obesity
 Urinalysis: Specific Gravity: 1.010
 Sugar: Absent
 Albumen: Absent
 Sediment: Rare hyaline cast
 Blood Pressure 230 140
 120 90

The retinal arteries show a copper-wire reflex, some narrowing, a slight pressure effect—no tortuosities, hemorrhages or exudates. This woman has been under observation for nine months; her weight has fallen from 250 to 150 pounds. Her blood-pressure has ranged from 250 to 140 with
 120 90

ups and downs, but with lower readings recently. The arteries do not show as advanced changes as the two cases I have just described. One suspects that the pressure does not vary in them as in this case. This woman has no bad symptoms now. It seems to me from observing a number of such cases that in obese patients who lose weight the hypertensive arterial changes proceed slowly.

Fourth Case. Irma F——, Services of Dr. DeWolf, Ward H, Rhode Island Hospital.

Age 64. Diagnosis: Diabetes
 Urinalysis: Specific Gravity: 1.020
 Albumen: Trace
 Sugar: Present

Blood Pressure 150
 90

Retinal arteries narrow-pale, some brilliant reflex, slight pressure effect. The complication here is Diabetes, in fact, Diabetes is the disease, but there are definite arterio-sclerotic changes, particularly narrowing and reflex. Diabetes lowers the blood-pressure in these cases and the urinary picture is altered by the presence of sugar.

It seems that all patients with this arterio-sclerosis are potential diabetics.

A mild glycosuria is very common in these cases.

Fifth Case. William D——. Private Case.

Age 19. Diagnosis: Chronic Nephritis of 3 years' duration, beginning as a definite Acute Nephritis, with suppression of urine, bloody urine with casts, oedema, etc.

Urinalysis: Specific Gravity: 1.006
Albumen: 2% by volume
Sediment: Granular casts
Blood-Pressure 195
135

He is now working as a clerk and feeling well, but on a low protein diet and feels compelled to drink a lot of water.

Retinal Arteries appear to be normal.

This is a case of chronic nephritis and the Hypertension and cardiac hypertrophy are the results of renal disease. If persistent Hypertension is the cause of arterio-sclerosis, why doesn't this case show changes in the vessels after three years with a systolic blood-pressure, usually 200 or more? Young arteries are not so vulnerable and tension is not the only factor in producing changes.

In Nephritis, as you know, we sometimes see the so-called albuminuric retinitis with hemorrhages and exudates. The theory of H. Batty Shaw, an English internist, is that such changes are due to a severe, acute toxemia which knocks holes in the arteries quickly while in the arterio-sclerotic changes, we have the prolonged action of minute quantities of toxins the nature of which we can, as yet, only question. Heredity is considered to be an important etiological factor.

In closing, let me urge the use of the ophthalmoscope in these cases, the technical difficulties are few and within a short time you can learn to observe directly changes in the vessels. Studies by this method have been valuable to men trying to understand this great class of cases, because by observing the changes in the vessels they have been able to form a very clear idea of the extent to which arterio-sclerosis has progressed in the arteries of the retina, kidney and brain, and sometimes to tell whether or not a weak myocardium is so because of breaking down under long continued strain of Hypertension or from other causes.

In a given case, knowledge thus obtained may be of great help.

SOCIETIES

PROVIDENCE MEDICAL ASSOCIATION

The regular monthly meeting of the Providence Medical Association was called to order by the President, Dr. Edward S. Brackett, Monday evening, May 7th, 1928, at 8:45 o'clock. The records of the last meeting were read and approved.

The first paper of the evening was read by Dr. Albert H. Miller on "Post-operative Complications." When is appendectomy in the course of hysterectomy justifiable. Deductions from 556 cases of hysterectomy compared with 934 cases of appendectomy. In Dr. Miller's anesthesia cases he examines them before operation and follows them afterwards for complications. Slides were shown giving figures which seemed to show that pulmonary and circulatory complications are more frequent after gas oxygen than after ether, but this is markedly affected by the type of operation. Appendectomy is certainly indicated in selected cases of hysterectomy but more frequently with super-vaginal. The paper was discussed by Dr. Perkins, Dr. Noyes, Dr. Brackett and Dr. Miller. Dr. Gifford presented a frozen specimen of a mesenteric cyst taken from a five-year-old patient. There was gangrenous gut. This was a cholesterine cyst.

The second paper of the evening was by Dr. Frank B. Berry of New York City on "Lung Abscess" based on a large series from the Columbia section at Bellevue Hospital. He first described the formation and repair of lung abscess. One school considers it always embolic in origin. The other school considers it due to aspiration of infectious material. He considers it may be produced in either way. They find many cases apparently ideopathic. Numerous organisms have been found. Prognosis is best when treatment is started early. The principal symptoms are pain in chest, cough and sputum. Physical signs are frequently very slight. Clubbing of the fingers and toes often occurs. Treatment: 1. Postural. 2. Bronchoscopic. 3. Pneumothorax. 4. Surgery. Do not confine to one method of treatment, put to bed; explain treatment to patient and use posture several times daily. This alone often cures. Bronchoscopy has danger even in skilled

hands and is held in reserve. Pneumothorax benefits in centrally located abscesses. Used with great care. Arsphenamin treatment is doubtful as yet. Must be used very early. Optional time for surgical treatment is just before the wall begins to organize. Brain abscess and hemorrhage and fistulae are prone to occur after this. Conservative treatment has improved their mortality figures but they are feeling now that they may be getting too conservative. Almost 70% of cases now may be cured. An interesting series of slides was shown with pathological pictures, X-rays and tables. The paper was discussed by Drs. Fulton, Keefe, Ventrone, Belliotte, Batchelder and Berry.

Meeting adjourned at 10 P. M. Attendance 80. Collation was served.

PETER PINEO CHASE, *Secretary*

NEWPORT COUNTY MEDICAL SOCIETY

The annual meeting of the Newport County Medical Society was held in the Redwood Library, March 29th, 1928, with a large attendance of members and many guests.

At the opening of the meeting Dr. William S. Sherman, President of the Society, gave an address of welcome which will be found upon another page.

After reports of various committees the resignation of Dr. A. W. Stevenson, long an active member of the Society, was received and accepted with regret. Dr. John Ridlon was elected to membership.

The election of these officers followed:

Honorary Presidents—S. Cambreleng Powell, M.D.

President—D. P. A. Jacoby, M.D.

First Vice President—John A. Young, M.D.

Second Vice President—Frederick A. Asserson, M.D.

Secretary—A. Chase Sanford, M.D.

Treasurer—John H. Sweet, M.D.

Councillor of R. I. State Medical Society—Edward V. Murphy, M.D.

Censor—Samuel Adelson, M.D.

At the La Forge the guests of the Society who also attended the meeting at Redwood, were the officers of the Rhode Island State Society. President, Norman M. McLeod, M.D.; First Vice President Arthur N. Harrington, M.D.; Second

Vice President Frank F. Fulton, M.D.; Secretary James W. Leech, M.D.; Treasurer James Mowry, M.D. The Naval hospital was represented by Captain William H. Bell, M.D., and numerous other members of the hospital staff. Fort Adams was also represented.

Following the banquet, remarks were made by the newly elected President, Dr. Jacoby, the officers of the State Society and by Captain Bell.

HOSPITALS

THE MEMORIAL HOSPITAL

MEETING OF THE MEMORIAL HOSPITAL STAFF
HELD MAY 3, 1928

Meeting called to order at 9:25 P. M. by President Wheaton.

Minutes of previous meeting read and approved.

The records were approved, having been gone over at a previous meeting of the Executive Committee of the Staff.

The Resolution Committee submitted resolution on the death of Lester J. Gilroy, M.D. The report of the Committee was accepted and it was voted to inscribe a copy of this resolution on the records, a copy forwarded to Mrs. Gilroy and a copy to be forwarded to the Editor of the *Rhode Island Medical Journal* for publication.

A motion was made by Dr. Miller, seconded and passed, as follows:

It is recommended that the Chairman appoint a Committee of three to present to the Staff at the end of the hospital year a compilation of the Medical and Surgical work done at this hospital for that time.

The speakers of the evening were Drs. F. V. Hussey and J. E. Kerney.

Dr. Hussey presented two cases of Pyloric Stenosis operated at this hospital in the last ten days. Dr. Kelly assisted by giving medical history of the cases and Dr. Batchelder exhibited X-Ray films.

The speaker presented an interesting case of Adeno-Carcinoma of the Stomach, showing the specimen removed and pre-operative X-Ray films.

Discussion was led by Dr. A. T. Jones and Dr. C. H. Jameson.

Dr. Kerney then presented two Urological cases: one case of Pyelonephrosis of the right kidney containing large stones and accompanied by complete destruction of kidney tissue; one case of Pyelonephrosis with stone, having T. B. Bacilli present in the pus.

The speaker emphasized the need of early complete urological examination.

Discussion was opened by Dr. C. H. Jameson.

Speakers were extended thanks of the Staff by President Wheaton, who also appointed the following committee on records: Dr. A. H. Miller, Chairman; Dr. W. P. Davis and Dr. S. Sprague.

Adjourned at 10:35 P. M.

STANLEY SPRAGUE, M.D.

Secretary, pro tem.

OBITUARY

LESTER JAMES GILROY, M.D.

The Memorial Hospital Staff Association has learned with profound regret of the death of Doctor Lester J. Gilroy on April 2, 1928, after a brief illness from septicaemia. He was born in Attleboro, Massachusetts, on March 31, 1898, and reached his thirtieth birthday but two days before his death. He was graduated from Tufts Medical School in 1920 and served internships of one year at the Carney Hospital, Boston, and six months at the Providence City Hospital. He then settled in Pawtucket and engaged in the general practice of medicine, soon after this becoming a member of the Pawtucket Medical Association, the Rhode Island Medical Society, and the American Medical Association. He had served as Secretary of the Pawtucket Medical Association for two years, and had only recently been elected its Vice President. He had served as physician to the Out-Patient Department of the Memorial Hospital for six years, where his work was thorough and painstaking. He was examiner for the Metropolitan Life Insurance Company. Doctor Gilroy was a member of the Phi Chi medical fraternity and the Knights of Columbus, but otherwise was not affiliated with any social or fraternal organizations. He married Miss Helen McCaffrey of Attleboro, Massachusetts, and is survived by her and one daughter, three years of age.

Doctor Gilroy was a man of quiet and unassuming demeanor, who endeared himself to all with whom he came in contact by his charm of manner and his thoughtful interest in the welfare of others. He was profoundly interested in the practice of his profession and his work in the Memorial Hospital had been of a high order of merit. He was fond of his family and friends, but had never sought public office. The circumstances of his illness were particularly tragic and his death was a tribute to the quiet heroism of the profession in the face of duty.

The Staff Association extends the heartfelt sympathy of its members to his family and desires to spread this memorial upon its records.

ROLAND HAMMOND, M.D.

CHAS. F. SWETT, M.D.

ROBERT T. HENRY, M.D.

Committee

BOOK REVIEWS

AMERICAN MEDICINE AND THE PEOPLE'S HEALTH, by Harry H. Moore. Published by D. Appleton & Company.

This book is a cold-blooded survey of the organization of medicine in the United States, private and state, curative and preventive. The large scope of this work allows of only a presentation of the facts as are, without much discussion. This gives one a sense of disjointment on reading the book. However, on closer study, one can see that the author has really arranged his material in a logical sequence. The appendices of 250 pages, one-third of the entire book, help to give added facts supporting the original text. This makes the book valuable for reference, especially to those actively engaged in the practice of medicine and public health.

For the general practitioner, part two containing the chapters on "*The Manifestations of the Maladjustment in Medicine*" makes interesting reading. He will also get much food for thought in reading the chapter on clinics.

The chapters dealing with costs are interesting. It is rather refreshing to think that for \$25.00 a year, under proper organization, a family can get all the necessary medical attention it needs. The physician also seems to do very well under this organization.

There are many interesting facts in this book although on the whole they make rather dry reading matter unless one likes statistics.



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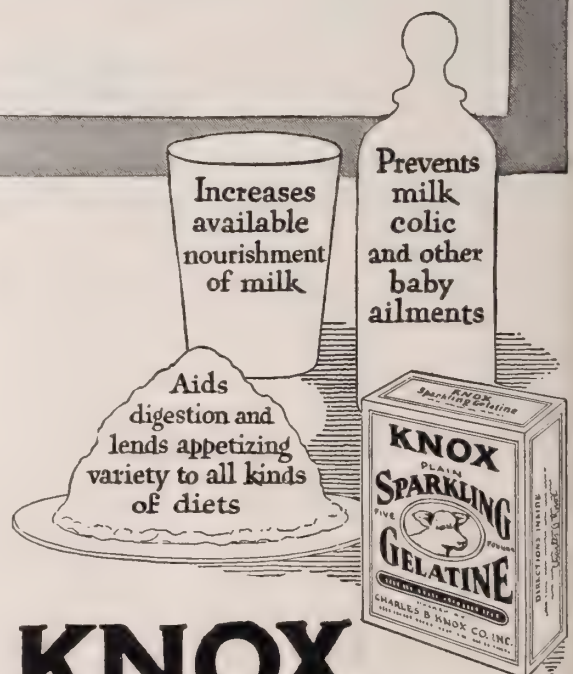
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References: Dr. I. O. Denman, Ear, Nose and Throat Monthly, March 1923 and January 1926. Dr. H. Gerstenberger, Amer. J. of Diseases of Children, Oct. 1922, p. 320. Dr. J. Zahorsky, Mo. State Med. Jour., Feb. 1925. Drs. A. R. Hollender and Maurice H. Cottle, Amer. J. of Phys. Therapy, Apr. 1925, and Eye, Ear, Nose and Throat Monthly, Feb. 1925.

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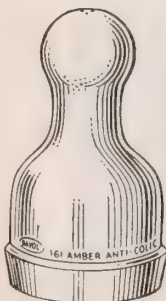
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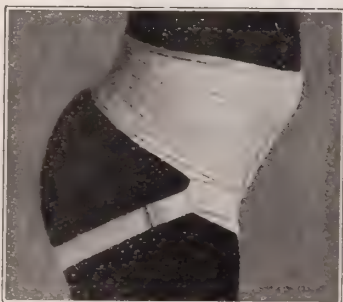
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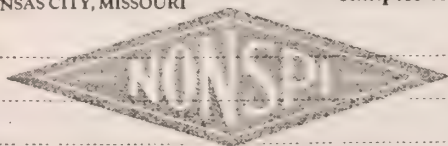
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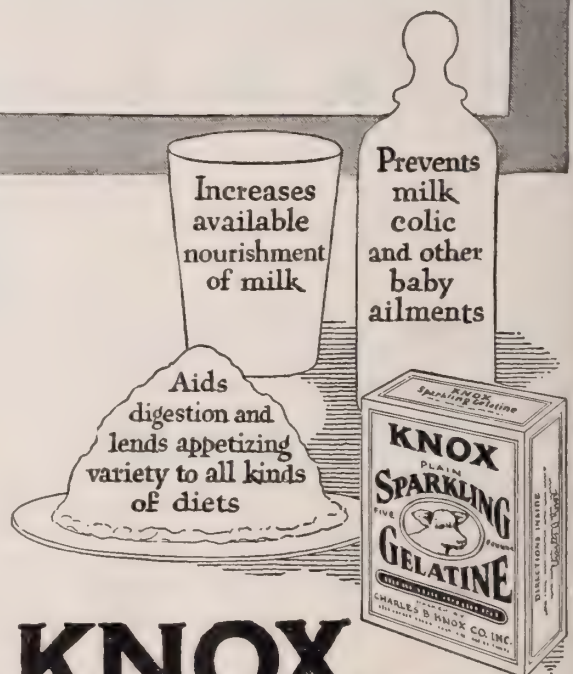
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ORIGINAL ARTICLES

POST OPERATIVE MASSIVE COLLAPSE OF THE LUNG*

BY EDWARD S. CAMERON, M.D.

PROVIDENCE, R. I.

Massive collapse of the lung was defined in 1890 by William Pasteur¹ of England as "A total deflation of a large area of lung tissue, of sudden onset, in the absence of any signs of obstruction to the airway, or of any known cause of compression, due to failure of inspiratory power, and attended by definite physical signs and symptoms." If we omit the phrase "due to failure of inspiratory power" from Pasteur's definition, we find it to be as acceptable as any proposed to date. It may be added that the lung deflation referred to here must occur in previously well aerated lung tissue, there being no relation, of course, to congenital atelectasis.

There is some diversity of opinion among writers on the subject as to the proper name which shall be used in describing this condition. Jackson and Lee,² Churchill,³ and Mastics, Spittler and McNamee⁴ prefer the term Pulmonary Atelectasis. Massive collapse of the lung, the term first proposed by Pasteur in 1890, would seem to be as correct as others suggested to date, and possibly more applicable to post operative lung collapse as referred to in this paper.

ETIOLOGY:

Gairdner,⁵ 1853, recognized collapse of the lung as occurring not infrequently in the adult, and believed it to be caused by several factors, "firstly, the existence of mucus in the bronchi; secondly, weakness or inefficiency of the inspiratory power, however caused; thirdly, inability to cough and expectorate and thus to remove the obstructing mucus." He felt that the obstructing mucus exerted a ball valve action in the bronchi, the air

thus being expelled from the lung tissue and collapse resulting.

Lichthime,⁶ 1878, was able to produce lung collapse in experimental animals within twenty-four to forty-eight hours after occlusion of the bronchus, and held that the residual air was absorbed by the blood stream. That blood stream absorption of residual alveolar air following bronchial occlusion does occur has been confirmed by subsequent observers, and is an accepted fact at the present date.

William Pasteur¹ in 1890 was the first to definitely describe and name Massive Collapse of the Lung. His attention was first directed to the condition during a severe epidemic of diphtheria in London, when he noted thirty-four cases of massive collapse following post-diphtheric paralysis of the diaphragm. Pasteur thought the condition was due to some deflating force in the absence of any air way obstruction. He concluded that partial paralysis of the diaphragm and intercostal muscles was a direct cause of lung collapse.

In 1908 he¹ again discussed the subject before the Royal College of Physicians. He contrasted the condition with that of scattered lobular atelectasis following obstruction of the bronchioles by secretion or foreign material. At this time he suggested that reflex inhibition of the diaphragm might cause massive collapse.

Sir James Barr,⁸ in 1907, was the first to report a case of lung collapse as a post operative complication. He thought the condition was caused by a lowered intrathoracic negative pressure.

In 1914, Pasteur⁹ brought out the fact that collapse of the lung was not a rare complication following operative procedures, and reported fourteen cases occurring in a series of two thousand abdominal operations at the Middlesex hospital. Reasoning from his observations in post diphtheric cases, he concluded that post operative massive collapse of the lung was the result of reflex arrest of one half of the diaphragm, and accessory respiratory muscles, the reflex being probably along some branch of the vagus. He theorized that "whenever, whether as the result of paralysis or of reflex inhibition of muscular power, the dis-

*Read before the Providence Medical Association June 4th, 1928.

tending force acting on the lungs becomes less than that of the elastic and muscular agencies which tend to cause its contraction, the latter, so to speak, take charge, with the result that the affected portion of the lung rapidly empties itself of its contained air."

The same year, Elliott and Dingley¹⁰ reported eleven cases following abdominal operations. After careful study, they concluded that, due to immobilization of the diaphragm and shallow respiratory movement, the bronchioles became blocked with secretions, the residual alveolar air was taken up by the blood stream, and collapse resulted.

From 1918 to 1920, Sir John Rose Bradford¹¹ made a careful analysis of the subject in connection with war wounds. He observed cases of collapse following fractures of the pelvis and thigh, and injuries to the trunk and chest, and drew particular attention to a case following an apparently trivial injury to one side of the chest, the collapse occurring in the opposite lung, and without any operative interference. In several deaths following massive collapse, he failed to find post mortem evidence of any lesion which would interfere with lung aeration, and stated "that spasm of the bronchioles would probably be a sufficient explanation of the condition, if we could surmise how it could be brought into action."

Scrimger¹² of Montreal was the first to describe this condition in the American literature, in 1921. He reported seven cases of post operative lung collapse, occurring in a series of five hundred and forty consecutive operations. Scrimger believed the condition due to operative interference causing reflex disturbance of the vagus, with resulting spasm of the bronchioles, which, aided by subsequent collection of mucus, was sufficient to prevent passage of air to the lung, retained alveolar air being absorbed and collapse resulting.

Hearn and Clerf¹³ in 1927 reported a case of massive collapse of the lung, occurring in a child of eight years following closure of a gastrostomy fistula. They thought the condition in this case was caused by bronchial obstruction with tenacious mucus. Several bronchoscopies were done in an effort to rid the bronchus of this obstruction. Similar observations have been made by Jackson and Lee,¹⁴ and rapid recoveries reported following removal of the mucous plug obstructing the bronchus. A case of marked atelectasis of the left lung was observed at the Jackson clinic in 1926, occur-

ring in a three year old child, and caused by a piece of lead pencil plugging the left main bronchus. The collapsed lung was functioning normally twenty-four hours after removal of the obstruction.

Sante¹⁵ in January, 1927, reported three cases of post operative massive collapse and, later the same year, another. After careful review of the subject, he concluded that spasm of the bronchioles, induced by some irritation in the region of the supply of the vagus, was the primary cause of the condition.

It is evident, on consideration of the above résumé, that the exact cause of lung collapse, following injury or operation, is obscure. We find, on analysis of the literature on this subject to date, that four theories as to the cause of the condition are to be considered.

First, that paralysis of the diaphragm and accessory respiratory muscles, due to nervous reflex, is the primary cause of the deflation. This theory supported chiefly by Pasteur.⁹ In opposition to this explanation, it may be said that paralysis of the diaphragm produced experimentally by section of the phrenics, and as practiced in tuberculosis patients, with the idea of putting an affected lung at rest, has never resulted in this condition.

Second, that reduction of vital capacity of the lung, as demonstrated by Churchill and McNeil,¹⁶ due to involuntary limitation of respiratory movement (commonly seen after abdominal section), plus bronchial obstruction by accumulated normal secretations, were the two primary factors, collapse resulting on absorption of remaining alveolar air by the blood stream. Principal exponents of this theory: Elliott and Dingell,¹⁰ Mastics et al.,⁴ Churchill¹⁶ and others. Although it has long been known that areas of atelectasis or partial collapse may occur clinically in debilitated adults and in infants from these causes, it would not seem to explain the sudden massive collapse as observed following injuries and operative procedures. Again, no bronchial obstruction has ever been found in these cases at autopsy. Asthmatic patients, in whom there is an excessive secretion of mucoid material in the bronchioles, do not develop lung collapse.

Third, that the condition is due primarily to obstruction in some portion of the bronchial tree, the obstruction being caused by mucous plugs or foreign body. Theory supported by Hearn and

Clerf¹³ and Jackson and Lee.¹⁴ There is no doubt but that a foreign body such as a piece of lead pencil plugging a main bronchus, as reported by Jackson and Lee, may cause the picture of massive collapse. This explanation cannot apply, however, to most post operative cases and those following injuries.

Fourth, that reflex spasm of the bronchioles, due to disturbance in some region of the vagus supply, causes shutting off of the air way, lung collapse following, upon absorption of retained alveolar air. This view held latterly by Bradford,¹¹ and by Scrimger,¹² and Sante.¹⁵

Practically all of the more recent observers agree that some form of bronchial obstruction precedes the collapse. The contra-lateral type, as reported by Bradford, occurring after slight injury or fracture, is best explained by the theory of reflex spasm.

It has been demonstrated by physiologists (Dixon and Brodie¹⁷) that vagal stimulation will produce broncho-constriction, and lung collapse has resulted. The clinical and radiographic evidence in cases of massive collapse indicate some sudden and extensive involvement suggesting impairment of nerve control.

The reflex bronchial spasm explanation would seem to best account for the primary bronchial obstruction preceding post operative lung collapse.

INCIDENCE:

This condition is usually observed following some type of abdominal operation. The anesthetic used seems to have no influence, cases having been reported following local as well as general anesthesia.

A majority of the cases reported have been males, and the condition is apparently more apt to occur in comparatively young people.

SYMPTOMS:

Although Pasteur's theory as to cause has not been generally accepted, the clinical picture of this condition drawn by him has not been improved upon. This complication develops within three or four days after operation or trauma. Although the onset is probably always sudden, there are two chief clinical types of post operative lung collapse, the acute and the latent. The acute cases may occur in two forms: first, those characterized by an initial dyspnoea of such intensity and sudden-

ness as to suggest pulmonary embolism or pneumothorax; in others the symptoms may resemble acute pneumonia or heart failure. Chest pain is often present at the onset for a short time, but it is less intense than the pleuritic pain of pneumonia, and may be complained of as a sensation of tightness in the chest. There is apt to be some degree of cyanosis, and profuse sweating is a rather constant symptom. Definite elevation of temperature to 102 degrees or higher nearly always is found. The reason for pyrexia is obscure. Pasteur thought it comparable to the temperature-rise found in pulmonary infarction. Viscid expectoration, as an early symptom, has been noted by most observers.

In the second, or moderate form of acute collapse, the symptoms are similar but less severe.

The latent type may present practically no symptoms referable to the respiratory tract, although generally there are clear physical signs. These cases usually show a rise in temperature, at least, and have some dyspnea when turned on the uninvolved side.

PHYSICAL SIGNS:

There is restricted motion of the affected side, and retraction of the chest wall is often present, depending in degree upon the pliability of the thoracic cage, the retraction being most marked in young patients. Dullness, to flatness, on percussion, is present over the involved lung. There may be silent or tubular breathing over the dull area, usually without rales. Friction sounds have been reported by Mastics⁴ and others. Vocal and tactile fremitus, at first diminished, may later be increased. There is exaggerated breathing over the uninvolved lung. *By far the most important sign* is displacement of the heart toward the affected lung. This is probably the only sign peculiar to lung collapse, and is always present when the collapse is of sufficient degree, and unilateral, which it usually is. The apex beat, in right sided involvement, is carried across the mid-sternal line, and in left sided, to the left axillary region. In the absence of this sign, the diagnosis of massive collapse cannot be made with certainty. Heart displacement is most marked in right sided cases. The X-Ray evidence is conclusive. The affected lung shows a dense opacity, similar to that produced by fluid in the chest; the heart trachea and other mediastinal structures are displaced toward

the involved side. There is narrowing of the side of the chest affected, and elevation and immobilization of the diaphragm.

SUBSEQUENT COURSE:

The prognosis is generally favorable. The condition may end in one of three ways (Mastics et al.⁴): 1, Crisis; 2, Lysis; 3, Complication.

1. Crisis. This mode of termination is the most striking, and is characterized by a rapid re-inflation of the affected lung, and return to normal relation of the displaced intrathoracic viscera. This change to normal conditions may take place within a few hours after the onset of the collapse.

2. Lysis. Recovery by this mode is characterized by progressive aeration of the affected lung, as observed by serial X-Rays, and corresponding improvement of symptoms and physical signs. This process requires from one to three weeks.

3. Complication. Cases developing complications, of which broncho pneumonia is probably most common, will take the course of the intervening disease.

PATHOLOGY:

Owing to favorable outcome of the majority of cases reported, pathological evidence is somewhat limited. A number of necropsies have been obtained, however, and in general it may be said the involved lung was found to be in a state of collapse, without gross evidence of infection. The collapsed lung may be re-inflated by forcing air into it. Microscopic sections show absence of cellular infiltration.

DIAGNOSIS:

The suddenness of onset, in most cases generally within four days of operation; the free expectoration of viscid material (never prune juice sputum and rarely blood stained); absence of toxicity in uncomplicated cases; physical signs as stated, and the characteristic Radiographic evidence, will establish the diagnosis of the condition. The white blood count is moderately elevated, ranging from ten to twenty thousand.

TREATMENT:

Avoidance of trauma, as much as possible, during operative manipulations, suggests itself as a preventative measure. Intervals of deep breathing after operation, in order to secure adequate lung

ventilation, is suggested (Elliott and Dingley). Tight binders and strapping restricting respiratory movement are advised against. The patient's position should be changed at intervals following operation, and early modified Fowler's position is recommended.

Removal of mucus by means of the bronchoscope in cases of massive collapse must add some hazard, and in view of the fact that a majority of the cases recover spontaneously, this procedure should be undertaken only after due consideration. Forced respiration, with the patient turned on the unaffected side, as suggested by Sante,¹⁸ sounds logical, providing the general condition permits the procedure.

CASE REPORTS:

W. G., aged 20 years, referred by Dr. Charles L. Phillips, entered the Rhode Island Hospital October 28, 1927, with a history indicative of sub-acute appendicitis. Past or present symptoms gave no relation to gall bladder disease.

Physical examination was negative except for some rigidity and tenderness in the right lower quadrant. The heart was in normal position, the action regular, no murmurs heard.

The lungs were resonant throughout; there were no abnormal breath sounds or rales.

The blood pressure was 140/60; the hemoglobin 100 per cent.; white count 11,500, and the urinalysis negative.

At operation October 29th, under gas-oxygen-ether anesthesia, a long appendix, bound down by a few light adhesions, was removed through a right rectus incision. Further exploration revealed a distended gall bladder packed with small stones. Incision was extended upward and gall bladder removed with moderate difficulty. A rubber tissue drain was placed to the region of the foramen of Winslow. The complete operation took 1 hr. and 30 minutes.

The first day post operative, the patient's general condition was good, although showing a rather sharp reaction following operation. Second day, condition satisfactory, abdomen soft, temperature down to normal, pulse 110, no drainage. Rubber tissue drain removed. At the visit next morning, November 1st, the patient was slightly cyanotic, the temperature was 101, pulse 120, respirations 25. There was dullness over entire right back and absent breath sounds over dull area.

November 3rd, three days after onset of pulmonary complication, there was dullness to percussion of tubular breathing and increased voice sounds over right base to level of the fifth rib. Patient was now coughing and raising quantities of thick, mucoid material. Sweating was profuse. Pneumonia of the right lower lobe was diagnosed. General condition seemed quite good, wound O. K., belly flat, bowels open. Portable X-Ray taken November 2nd is reported as showing dullness of entire chest, the dullness obscuring diaphragm on the right. Heart and great vessels displaced to the right. Findings probably due to massive collapse of the lung.



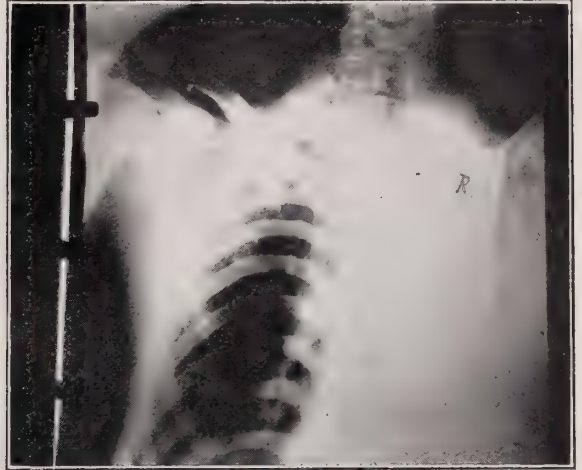
No. 1

Plate taken November 2nd, second day of collapse. Some air remains in right lung. Heart displaced to right of sternum.

On the fourth day after onset of chest signs, patient was fluoroscoped. Deviation of the trachea and heart toward the affected side were evident. Only a small portion of the cardiac apex extended to the left of the sternum. Patient turned on sound side and induced to cough and breath deeply, in effort to aerate lung, as suggested by Sante,¹⁸ without success. Some oozing of blood from wound followed this procedure.

November 5th, patient apparently quite comfortable. Continues to cough and expectorate thick mucus material. There is definite retraction and immobility of the right side of the chest. Apex beat of heart found in sixth space one inch from mid sternal line. Breath sounds over right base of lung less bronchial in character, more distant.

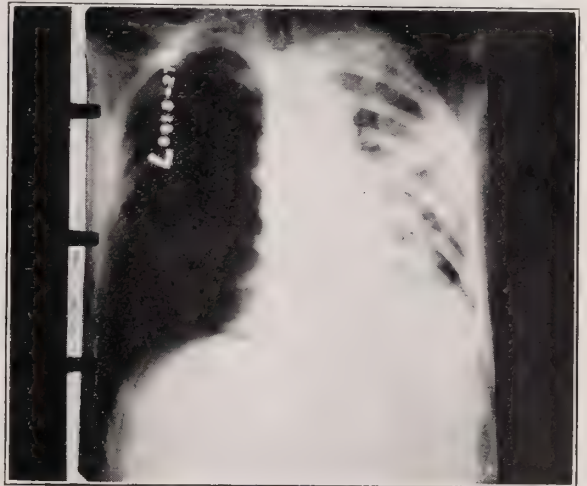
There is hyper-resonance on percussion over right top anteriorly and posteriorly. Some separation of wound to fascia in region from which drain was removed, with moderate amount of brownish serous ooze. White blood count 12,000.



No. 2

Plate taken 6th day of collapse. No evidence of air in right lung.

Matters progressed, with patient's general condition apparently good. Productive cough lasted about 6 days from onset. Chest signs varied from day to day. We come to note November 17th, seventeen days after onset of chest complication, which reads: "Chest examination shows apparent

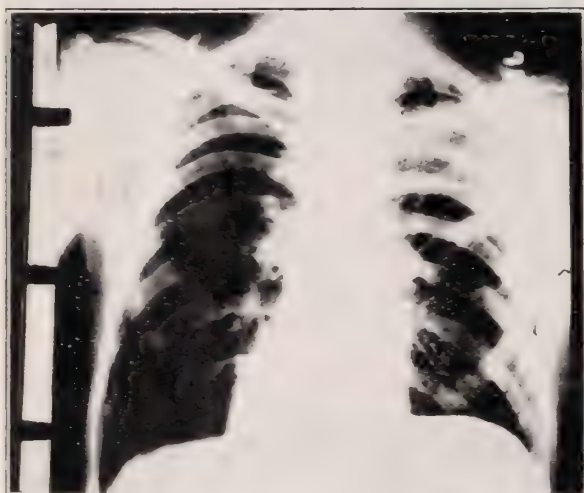


No. 3

Plate taken 17th day of collapse. Right lung showing aeration for first time. Right lung field densely opaque 3 days previously. (Note cardiac and mediastinal content displacement.)

aeration of upper lobes, although back remains dull. Dullness and absent breath sounds at right base, probably not fluid but retracted diaphragm. Apex beat almost back to normal location. Fluoroscopy today shows partial aeration of the right lung for first time since onset. X-Ray three days previous showed solid shadow."

November 26th. Separation of upper end of wound edges brought together with S. W. Gut sutures. No evidence of hernia. Interval X-Rays and physical examinations showed gradual clearing of lung signs. X-Ray, December 7th, thirty-seven days after onset, showed heart practically in normal position; slightly increased thickening in region of interlobar septum on right. The right lung field is slightly less radiant than the left, but practically normal.



No. 4

Plate taken 37 days after onset. Discharged from hospital at this time.

Discharge examination December 8th: "Heart in normal position, sounds clear, action regular. Lungs: Breathing seems normal throughout. Slight increase of tactile fremitus and voice sounds over right back and right top anteriorly. Expansion, both sides equal. Abdomen soft, no masses or herniae. Two small granulating areas in region of secondary sutures. General condition excellent. Discharged to own physician."

Comment, Case I:

This is apparently a case of massive collapse of the right lung terminating by lysis. Symptoms and signs seem to follow after removal of drain. The

attempt to secure aeration of involved lung by forced breathing and coughing, under fluoroscopic observation, on the fourth day of complication, was probably not good judgment. It would seem best to defer this procedure until more solid wound healing is obtained.

Case II:

I am indebted to Dr. Thomas Grzebien for permission to report this case.

A. H., aged 39, entered the hospital December 5, 1927, with typical symptoms and signs of acutely perforated gastric ulcer. Operation shortly after admission, gas-oxygen-ether anesthesia.

Perforated gastric ulcer near pylorus closed and drain inserted to region of perforation. Patient was doing well up to sixth day after operation, when, after removal of drain, temperature, pulse, and respiration showed elevation (temp. 102), and the follow-up note on the seventh day observes that there were signs of consolidation of right lung, but heart displaced to the right. Nurse's note states that patient was "coughing and raising considerable phlegm" at this time. Cough disappeared after four or five days. Temperature dropped to normal on fourth day, and note of December 14th, five days after onset, states that heart had returned to normal position. Patient was discharged from hospital ten days later.

Comment, Case II:

Although there is no X-Ray evidence with this case, it evidently was a lung collapse ending by crisis. The signs and symptoms followed removal of drain on sixth day after operation.

SUMMARY:

I. Massive collapse presents a definite clinical picture with characteristic X-Ray findings. The name applies to total deflation of one or more lobes of a previously well aerated lung.

II. The condition is not a rare post operative pulmonary complication, and is most often mistaken for pneumonia.

III. A large majority of cases of lung collapse, following operation, recover, so that recognition of the condition is especially important in relation to prognosis.

IV. The cause of post operative massive collapse of the lung is not known. Reflex spasm of the bronchioles, probably induced by some dis-

turbance to the region of the vagus supply, seems to be the best explanation for the primary cause of this condition. Sequence of events leading to collapse being: (a) vagal disturbance; (b) bronchial spasm with obstruction to airway; (c) absorption of retained alveolar air by blood stream; (d) lung deflation.

V. Attention is called to two cases of this condition following removal of deep seated abdominal drains.

¹Internst. Jour. M. Sc. Sept. 1890.

²Jackson and Lee, Ann. Surg. Sept. 1925.

³Churchill, Arch. Surgery Oct. 1925.

⁴Mastics, Spittler and McNamee, Arch. Surgery, Aug. 1927.

⁵Gairdner. W. T. Brit and For. Med. Chir. Ref. 11: 453, 1853.

⁶Lichthime, Arch. of Exper. Path. U. Pharmakol; 1879x54.

⁷Pasteur, Wm. Royal College of Physicians, 1908.

⁸Barr, J. Britt. M. J. 2:1289, 1907.

⁹Pasteur. Wm. Brit. Surg. Jour. 1914, I, 587.

¹⁰Elliott, T. and Dingley, L. A. Lancet I 1305, 1914.

¹¹Bradford, Sir J. R. Oxford Loose Leaf Med. 2;127, 1920.

¹²Scrimger, F. A. C. Surg. Gyn. Obs. 32, 486, June 1921.

¹³Hearn & Clerf. Ann. Surg. Jan. 1927.

¹⁴Jackson and Lee; Trans. Amer. Surg. Assoc. 1925, p. 723.

¹⁵Sante, L. R. Radiology, Vol. VIII, Jan., page 1.

¹⁶Churchill and McNeil; Surg. Gyn. and Obst. Apr. 1927.

¹⁷Dixon and Drodie; Jour. Physiol. 29:97; 1903.

¹⁸Sante, L. R. A. M. A. May 14, 1927.

NOTICE

The Editor of the RHODE ISLAND MEDICAL JOURNAL is particularly concerned to know the name and address of any person in Rhode Island that is entitled to the degree of M.D., who is not receiving this publication.

Kindly send this information to

DR. FREDERICK N. BROWN, *Editor*

309 Olney Street, Providence, R. I.

LIGATION OF ANGULAR VEIN IN INFECTIONS OF UPPER LIP

Of five cases of deep infections of the upper lip—more or less of the carbuncular type—seen by C. A. Roeder, Omaha (*Journal A. M. A.*, January 28, 1928), the first four patients died, three of a septic cavernous sinusitis with meningitis and one of a meningitis without clinical signs of a septic cavernous sinusitis. After this experience Roeder decided that in the future he would try, in the early stages of the disease, before intracranial infection had taken place, a ligation of the angular vein, with the same idea of trying to prevent a transmission of the infection as is carried out in the ligation of the internal jugular vein for septic lateral sinus thrombosis. Venous blood from the upper lip has a very free and direct connection with the cavernous sinus through the angular vein. To reach the cavernous sinus through the pterygoid plexus, the blood from the upper lip (and only a small portion of it because the facial carries most of it beyond) must pass through the ramus profundus, which is a small branch. From here it must pass through the pterygoid plexus and from there through the accessory vein of Visale. Although the flow of blood through the pterygoid plexus and angular vein is in either direction, depending on the path of least resistance, only a very small portion of the blood from the upper lip, passing downward through the facial vein, could pass through the small anastomotic branches into the pterygoid plexus. Most of the blood flowing downward from the upper lip, therefore, must go directly to the internal jugular through the facial vein; and nearly all the blood in the pterygoid plexus flows downward directly into the internal maxillary vein. A case is reported in which this ligation was done. An incision about one-half inch in diameter was made over the left angular vein, starting downward from the level of the inner canthus. The vein was definitely distended, probably because of a thrombosis below. It was tied between catgut ligatures and cut between. A culture from the lumen proved negative. The carbuncle was then burned out thoroughly with a small point electric cautery. During this procedure it was found that there was a purulent thick exudate undermining the lip to the midline and extending outward about three-fourths inch beyond the crater of the carbuncle. The entire cavity was thoroughly cauterized, leaving a clean granulating wound forty-eight hours later. Recovery was very satisfactory.

THE RHODE ISLAND MEDICAL JOURNAL

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R. I. Ophthalmological and Otological Society—2d Thursday—October, December, February, April and Annual at call of President.
Dr. Francis B. Sargent, President; Dr. Joseph E. Raia, Secretary-Treasurer.
The R. I. Medico-Legal Society—Last Thursday—January, April, June and October. Dr. Creighton W. Skelton, President; Dr. Jacob S. Kelley, Secretary-Treasurer.

EDITORIALS

COST OF MEDICAL CARE

Of great interest to physicians is the recent formation of a "National Committee on the Cost of Medical Care." It is a very representative body, with Dr. Ray Lyman Wilbur of Stanford University as Chairman, with headquarters in Washington, D. C. On the committee are fourteen physicians representing private practice, six representing public health, eight representing institutions and organizations, five persons representing economics and nine persons representing the public.

It proposes a five year study of the high cost of ill health. In the words of the committee, "The high cost of ill health is not due to the fact that physicians as a group are being paid too much. On the other hand, it is doubtful whether the income of the majority is adequate. The cost of medical education (often \$10,000 or more), together with the free work at the homes of clients, uncollectable bills, free service in hospitals and clinics, failure to charge for preventive work, and high cost of equipment and living—these various items often reduce the net income to an amount far from satisfactory. It has been estimated that the physicians of Denver, Colorado, give at least one million dollars worth of services per year without

charge. Nurses and others engaged in the cure and prevention of disease are surely not getting rich at the expense of the sick. It is the large number of separate charges, in many cases, which causes hardship.

There is much complaint among the people because of the high cost of medical care. There is, also, much dissatisfaction among physicians and other personnel because of insufficient income. The question arises whether the present system meets adequately the needs either of the patient or of those who render him professional service.

The support of this committee has been made possible by the Carnegie Corporation, the Milbank Memorial Fund, the Russell Sage Foundation, and the Twentieth Century Fund for this five year study. The American Medical Association, the American Public Association, the United States Public Health Service and other agencies have agreed to co-operate with this committee.

Every physician will agree that this study should be made. That its conclusions will be based on facts, and that its recommendations will be sound, would seem to be assured by the ability and character of the committee members and the diversified interests which they represent.

THE PATHOLOGICAL LABORATORY

In a general hospital, the pathological laboratory should be the nucleus. The grade of work done in the laboratory influences the work of the hospital as a whole, and without the services of an excellent pathological service, the hospital cannot excel in the performance of its duty to the public. The laboratory should be the center of the spirit of scientific research in the hospital, and a constant aid and stimulus to the clinical staff in working out their problems. It should be pervaded by the spirit of helpfulness and co-operation.

The main functions of the pathological laboratory may be described as follows:

First—and most important—is the function of aiding the clinical staff in its care of patients by various routine procedures; for example, (1) the examination of surgical specimens and biopsy material; (2) bacteriological examinations; and (3) blood chemistry and other procedures. In all these and especially in the examination of surgical speci-

mens there is need for technical expertness, speed and accuracy.

Second in importance in the work of the pathological laboratory is the aid given to the clinical staff in working out the problems involved in their clinical cases with a view to enhancing their knowledge of disease and increasing their value as clinicians. This is accomplished by the performance of necropsies with the demonstration of both gross and microscopic pathology and at times by other procedures. This work is of benefit to patients indirectly through increasing the ability of the clinicians.

Third, and of least importance, is the matter of research. This should involve especially the study and reporting of unusual pathological material that comes under the observation of the pathologist. Research may be very fruitful if well planned and carried out, but should be regarded as a secondary function of the laboratory, which must not interfere with the main functions already mentioned.

INTERSTATE PRACTICE

In all states it is unlawful for a physician to practice his art without being licensed by the state. The enforcement of such a law reduces, in a way, the practice of medicine to an orderly procedure, and serves toward public protection. The basic principle of the law is correct, and law is necessary. It is now, however, broad enough to cover contingencies that are bound to arise.

Along the borders of all states are regions which should be served medically by cities across the state line. The inhabitants of these particular regions may not have access to a physician, except one who cannot legally attend them in the home. In most instances such practices are condoned and nothing is said.

The state whose people are in need tacitly recognizes the necessity by not enforcing the law against such practice. That is a poor way to accomplish the desired ends.

A reciprocal agreement between states ought to be worked out which will give individuals in an area sparsely supplied with doctors the right to have as good medical service as a nearby friend across the line. If such an arrangement cannot be made by the proper authorities of the state, why not refer the matter to the affected area?

SOCIETIES

THE RHODE ISLAND MEDICAL SOCIETY

COUNCIL

May 24, 1928

The annual meeting of the Council was held May 24, 1928, at the Medical Library, and was called to order by the President, Dr. Norman M. MacLeod, at 4:15 P. M.

The report of the Treasurer, duly audited and found correct, was presented, and it was voted to refer it to the House of Delegates with recommendation that it be adopted.

TREASURER'S ANNUAL REPORT, 1927

EXPENDITURES

Collations and Annual Dinner Expenses.....	\$713.00
Expenses of Secretary (Sec. hire).....	75.00
Printing and Postage.....	93.83
Gas	41.36
Electricity	107.18
Fuel	570.75
Telephone	107.63
City Water	8.00
House Supplies and Expenses.....	503.69
House Repairs	491.74
Librarian	1,495.00
Janitor	600.00
Journals (Ely Fund).....	74.25
Books	65.20
Rhode Island Medical Journal.....	425.00
Safe Deposit	5.00
Treasurer's Bond	25.00
Delegate to American Medical Association....	100.00
Delegate to New England Medical Council....	24.55
	<u>\$5,526.18</u>
Cash on Hand to Balance.....	2,255.03
	<u>\$7,781.21</u>

May 22, 1928.

Examined and found correct.

GEORGE R. BARDEN, M.D.

RECEIPTS

Cash on Hand, January 1, 1927.....	\$2,175.73
Annual Dues	3,860.00
Donations	1,305.12
Ely Fund	74.00
Harris Fund	290.00
Interest on Daily Balance.....	56.11
Balance of Day Fund.....	20.25

\$7,781.21

1927.

Jan. 1. Chase Wiggin Fund	
By indebtedness to R. I.	
Medical Society	\$6,892.21
	<u>\$6,892.21</u>

1927.

Jan. 1. H. G. Miller Fund	
By indebtedness to R. I.	
Medical Society.....	\$5,359.10
Interest	250.00
	<u>\$5,609.10</u>

1928.

Jan. 1. Chase Wiggin Fund	
To Loan R. I. Medical	
Society	\$6,892.21
	<u>\$6,892.21</u>

1928.

Jan. 1. H. G. Miller Fund	
To Loan R. I. Medical	
Society	\$5,359.10
Rent H. G. Miller Room	250.00
	<u>\$5,609.10</u>

1927.	
Jan. 1.	J. W. C. Ely Fund
	1 Bond, So. California
	Edison Co. \$980.00
	Interest on same..... 50.00
	8 shares Mechanics Nat'l
	Bank Stock 480.00
	Interest on same..... 24.00
	<u> \$1,534.00</u>

1927.	
Jan. 1.	Endowment Fund
	2000 Oklahoma Gas &
	Elec. Co. 1st Mort. 5% \$1,920.00
	Interest on same..... 150.00
	Cash on hand..... 1,238.40
	Bank interest 60.86
	<u> \$3,369.26</u>

1927.	
Jan. 1.	Printing Fund
	By indebtedness to R. I.
	Medical Society \$1,677.52
	<u> \$1,677.52</u>

1927.	
Jan. 1.	E. M. Harris Fund
	1000 Pacific Gas & Elec.
	Co. 6% \$1,000.00
	Interest on same..... 60.00
	2000 So. Illinois L. & P.
	Co. 1st Mort. 6%..... 2,000.00
	Interest on same..... 120.00
	2000 Iowa Power & Ltg.
	Co. 1st Mort. 5½%... 2,050.00
	Interest on same..... 110.00
	<u> \$5,340.00</u>

1927.	
	Frank L. Day Fund
Aug. 10.	Received from Est. of
	Frank L. Day..... \$3,000.00
Sept. 6.	Purchased Ca-
	nadian Nat.
	Ry. Co. 4%..\$2,979.75
	Balance from
	purchase of
	bonds 20.25
	<u> \$3,000.00</u>

1928.	
Jan. 1.	J. C. Ely Fund
	1 Bond, So. California
	Edison Co. \$980.00
	8 Shares Mechanics Nat.
	Bank Stock 480.00
	Paid R. I. Medical Soc.
	(For Journal) 74.00
	<u> \$1,534.00</u>

1928.	
Jan. 1.	Endowment Fund
	Cash on hand..... \$1,449.26
	Oklahoma Gas & Elec.
	Co. 1,920.00
	<u> \$3,369.26</u>

1928.	
Jan. 1.	Printing Fund
	To Loan R. I. Medical
	Society \$1,677.52
	<u> \$1,677.52</u>

1928.	
Jan. 1..	E. M. Harris Fund
	1000 Pacific Gas & Elec.
	Co. \$1,000.00
	2000 So. Illinois L. & P.
	Co. 2,000.00
	2000 Iowa Power & Light
	Co. 2,050.00
	Paid R. I. Medical Soc.
	for repairs on building 290.00
	<u> \$5,340.00</u>

1928.	
Jan. 1.	Frank L. Day Fund
	3000 Canadian Nat. Ry.
	Co. 4% \$2,979.75
	Cash on hand..... 20.25
	<u> \$3,000.00</u>

Examined and found correct.

GEORGE R. BARDEN, M.D.

May 22, 1928.

The Treasurer reported that Dr. Carolyn M. Cassidy was delinquent in dues and it was voted that she be dropped for non-payment of her dues.

Dr. E. B. Harvey notified the Treasurer that under Sec. 9 of Article 4 of the By-laws he was eligible to be placed on the non-paying active membership roll and so requested. It was, therefore, voted that Dr. E. B. Harvey be relieved of further payment of dues to the Society.

Dr. Julian Chase raised the question of group insurance being taken out by the Society and the President stated that this was his purpose to bring the matter before the House of Delegates for consideration and, therefore, discussion by the Council was formal.

Dr. Fulton pointed out the probabilities of the necessity of moving our library and meeting place to another site in the future and it was voted that the matter be referred to the House of Delegates for further study and subsequent report.

On motion of Dr. DeWolf, seconded by Dr. Chase, it was voted that the salary of the Librarian be increased by \$100 per annum, and that this action be referred to the House of Delegates for ratification.

Adjourned.

Respectfully submitted,

J. W. LEECH, *Secretary*.

HOUSE OF DELEGATES

May 24, 1928

The House of Delegates met May 24, 1928, at the Medical Library, Providence, the meeting being called to order by the President, Dr. Norman M. MacLeod, at 4:45 P. M.

The following officers and committees were elected for the year 1928-29:

President, Dr. A. H. Harrington, Providence; First Vice-President, Dr. Frank T. Fulton, Providence; Second Vice-President, Dr. Julian A. Chase, Pawtucket; Treasurer, Dr. Jesse E. Mowry, Providence; Secretary, Dr. J. W. Leech, Providence.

Committee on Arrangements—Dr. Wilfred Pickles, Chairman, Providence; Dr. Isaac Gerber, Providence; Dr. B. H. Buxton, Providence; Treasurer, *ex-officio*.

Committee on Legislation, State and National—Dr. H. E. Harris, Chairman, Providence; Dr. C. H. Holt, Providence; Dr. C. F. Gormly, Providence; President and Secretary *ex-officio*.

Committee on Library—Dr. J. A. Mack, Chairman, Natick; Dr. John Donley, Providence; Dr. Guy W. Wells, Providence.

Committee on Publication—Dr. F. N. Brown, Chairman, Providence; Dr. C. W. Skelton, Providence; Dr. C. S. Christie, West Warwick; President and Secretary *ex-officio*.

Committee on Education—Dr. R. M. Lord, Chairman, Providence; Dr. C. C. Dustin, Providence; Dr. P. P. Chase, Providence; President and Secretary *ex-officio*.

Committee on Necrology—Dr. W. P. Davis, Chairman, Providence; Dr. T. J. McLaughlin, Woonsocket; Dr. J. A. Young, Newport.

Curator—Dr. C. D. Sawyer.

Auditors—Dr. Murray Danforth for two years and Dr. G. R. Barden has one year to serve.

Member New England Medical Council—Dr. Norman MacLeod for three years, Dr. B. U. Richards for one year, Dr. H. G. Partridge for two years.

The following annual reports were presented:

Annual Report of the Secretary, 1927-28

I beg leave to submit herewith the annual report of the Secretary upon the condition and activities of the Rhode Island Medical Society for the year 1927-28.

The House of Delegates and the Council have met in regular meetings, no special sessions having been deemed necessary.

The September meeting of the Society was held at the Crawford Allen Hospital upon the invitation of the Board of Trustees of the Rhode Island Hospital. The December and March meetings were held in the Medical Library. The scientific programs of these two meetings were the offerings wholly of Fellows of the Society and were of a stimulating and interesting character.

The membership roll of the Society to date comprises: Active members, 429; non-resident, 27; honorary, 8. During the year our membership has shown a healthy, though not unusual, upward trend. Twenty-one (21) new members have joined the Society, and one former member has been reinstated. The following members have been dropped for non-payment of dues: Dr. J. G.

Boucher, Dr. T. G. Granata. Two have resigned and nine have died, a net gain of nine over the enrollment of a year ago.

The Committee on Necrology will present extended memorials upon our deceased members at the annual meeting and, therefore, this report will confine itself to a list of the Fellows who have died since our last annual meeting.

Dr. James N. Lewis, Ashaway, R. I., May 28, 1927.

Dr. Wm. A. Sherman, Newport, R. I., June 17, 1927.

Dr. Lambert Oulton, Providence, R. I., July 6, 1927.

Dr. Chas. F. Peckham, Providence, R. I., Aug. 16, 1927.

Dr. John J. Baxter, Woonsocket, R. I., Sept. 13, 1927.

Dr. A. A. Mann, Central Falls, R. I., Feb. 12, 1928.

Dr. Lester J. Gilroy, Pawtucket, R. I., April 2, 1928.

Dr. Henry C. Hall, Providence, R. I., April 7, 1928.

Dr. John Francis Kerins, Providence, R. I., April 18, 1928.

The Society has taken part in the New England Conference of Medical Societies which meets annually to discuss subjects of pertinent and peculiar interest to the Medical profession of New England.

Reference to the enrichment of our Library has been made through other channels, but this report would be incomplete if it were presented to you without again calling to mind the generous-hearted action of Dr. James H. Davenport in presenting to the Library his incomparable collection of essays, poems, fiction, etc., by medical men, comprising over 1,100 volumes. This unique library is housed in the Miller Room and the donor may rest assured that the results of his years of zestful and happy book-collecting are in grateful and considerate custody.

This office has been in close touch with the proceedings of the national Congress during the year and especially during the present session, which is dealing largely with the income tax bill, which contains two items of especial interest to physicians, namely, amendment to the Harrison Narcotic Tax, and the question of deduction of ex-

penses of physicians travelling to attend medical meetings. Letters and telegrams to our Senators and Representatives at Washington have explained to them what your Secretary thought is the attitude of the Society relative to these matters. I am happy to announce the amendment to increase the tax under the Harrison Narcotic Act from \$1.00 to \$3.00 per annum has been defeated and that the amendment authorizing the deduction from taxable income of travelling expenses to medical meetings has passed the Senate and that the strongest representations from this office and State Secretaries all over the country are being made to members of the House of Representatives, urging conjoint action with the Senate in this regard. May I not in this connection direct your attention to efforts of the American Medical Association to affect national legislation favorable to medical profession of the country through the untiring industry and zeal of Dr. W. C. Woodward, Executive Secretary of the Bureau of Legal Medicine and Legislation of the A. M. A.

In concluding this report, I wish to pay my respects to the activities of the officers, delegates, councillors and committees in their whole-hearted labors to carry on and advance the many activities of the Society during the past year.

Respectfully submitted,

J. W. LEECH, M.D., *Secretary*

Committee on Arrangements

Dr. Guy W. Wells, Chairman of the Committee on Arrangements, reported that his committee had arranged for collations for the December and March meetings, and that arrangements were going forward for the annual banquet and luncheon in connection with the annual meeting June 7th.

Committee on Library

I have the honor to submit the following report of the Committee on Library.

In the fall of 1927 Dr. James Henry Davenport presented to the Rhode Island Medical Society his library of over 1,200 volumes. This unusual collection comprises the extra-professional writings of physicians and surgeons. The collection includes autobiography, biography travel, essays, art, poetry and fiction. To comply with Dr. Davenport's request that the collection be kept intact,

appropriate space for its housing has been provided in the Miller Room of the Library.

The Society is to be congratulated on the acquisition of such a splendid collection. Some recognition of Dr. Davenport's gift would be appropriate.

Seventy-nine volumes were added to the Library by gifts; five books were purchased and 140 volumes bound. The binding was paid for by money donated for the purpose by the Providence Medical Association.

There are 97 medical journals currently received.

The income from the Frank L. Day Fund for the purchase of books for the Rhode Island Medical Society Library is now available and will provide for books needed.

Respectfully submitted,

DR. JOHN G. WALSH,

Chairman

Committee on Necrology

The following members have died in the past year:

1927

May 28. Dr. James N. Lewis
June 17. Dr. William A. Sherman
July 6. Dr. Lambert Oulton
Aug. 16. Dr. Charles F. Peckham
Sept. 13. Dr. John J. Baxter

1928

Feb. 12. Dr. Augustine A. Mann
April 2. Dr. Lester J. Gilroy
April 7. Dr. Henry C. Hall
April 18. Dr. John F. Kerins

DR. S. SPRAGUE, *Chairman*

Annual Report of the Legislative Committee of the Rhode Island Medical Society

During the past State legislative sessions there were added to our General Laws of medical interest, the following, Chapters Nos. 1133, 1150, 1185, 1186, 1187, 1198, 1211, 1235, 1236.

Chapter 1133, S5—Refers to Medical Examiners and simply adds a new Examiner for Washington County.

Chapter 1150, H602, Sub. A, of Osteopathy—Simply appropriates money from the General Treasury to defray the expenses of the Osteopathic Board not previously sufficiently recompensed.

Chapter 1185, S132—Employment of a Superintendent of Health by two or more towns. It pro-

vides that a committee of the Town Councils may select a physician to act as their Superintendent of Health, provided he is approved by the State Board of Health. This is a step in the right direction, and seems to follow educational lines. Several towns in this State have joined and are now employing one Superintendent of Schools.

Chapter 1186, S134, Sub. A, relating to Chiropractors.—This specifically states that he can use the State pathological and chemical laboratories as any physician may. They gained nothing this year. Any layman can send his urine or blood to the State Laboratory and get a report if he so desires. The Chiropractors endeavored to get permission to practice physiotherapy but this clause was cut out of their bill.

Chapter 1187, S132, Oversight of Camps—Granted to State Board of Health. This applies to a site for ten or more persons. State Board of Health grants a certificate to operate such. Act appropriates \$1,000 for this work for this fiscal year.

Chapter 1198—Inspection and licensing of swimming pools by State Board of Health, who shall make rules governing their existence—\$1,000 appropriated for carrying out its provisions. Appeal from decision of Board can be made to the Superior Courts of Providence or Bristol.

Chapter 1211, H798—Regulation of hairdressing parlors, also places supervision with State Board of Health. It will determine what appliances, apparatus, electrical machines may be used in connection with the practice of hair dressing and cosmetic therapy. This act originated following the promiscuous use of the X-ray in some of these shops.

Chapter 1235, S19, Optometry—It raises the standard for the practice of optometry in this State equal to the best in the country. Requires a two years course, followed by a six months practical course with a registered optometrist in this State. It allows the use of the prefix Doctor. The Senate Committee gave a special invitation to the Legislative Committee to the hearing on this bill and the Secretary of this Association was a member of the Committee to help put this bill in satisfactory shape for our profession.

Chapter 1236, Relating to use of Narcotics—This bill was to allow the Board to grant permits

for the use of hypodermic syringes, etc., but a reference in an amended section upon examination later in the office of the Secretary of State was found to mean nothing, and therefore this act has added nothing to the present law although the intentions were good.

The Legislative Committee was granted every courtesy this year especially from the Senate Judiciary Committee. Private hearings were granted and a majority of the individual members of the Committee were interested and eager to hear what the medical profession had to say. Dr. Hamlin of this Committee deserves praise for his untiring efforts to aid this Society and the State Board of Health in health matters. Dr. Richards of the State Board of Health also was always ready to help us out in every way possible.

Respectfully submitted,

HERBERT E. HARRIS, M.D.

CHARLES H. HOLT, M.D.

CHARLES H. GORMLY, M.D.

Committee on Publication

Mr. President:

As Chairman of the Committee on Publication, it is my duty, yearly, to render to the Society, a report of the administrative management of the RHODE ISLAND MEDICAL JOURNAL.

There has been, during the past year, no outstanding incident to exalt the JOURNAL, and nothing has occurred to disturb the ordinary routine of affairs.

Thanks to the untiring efforts of our business manager, our finances are in a satisfactory condition.

Respectfully submitted,

DR. FREDERICK N. BROWN

Chairman

A Report of the Board of Trustees of the Rhode Island Medical Society Building for the Past Year

There is very little to report.

The Dr. Miller Room has been repaired and put in condition for receiving Dr. Davenport's library.

The Stock Room has been cleaned and the walls painted. This work had previously been planned. The walls had never before been painted, so it was necessary to use three coats of

paint and was rather more expensive than anticipated. It was badly needed in order to keep the walls from disintegrating.

The furnace has been repaired and put in order.

There has recently been a pay station telephone installed on the first floor just inside the Stock Room.

FRANK T. FULTON, M.D.

Chairman of Board of Trustees

Report of the Committee on Education, May, 1928

During the winter and spring of 1928 sixteen radio talks were arranged, through the courtesy of station WJAR. Owing to the fact that WJAR was unable to give us a suitable time early in the season, we were obliged to start these talks later than last year.

An effort was made to select the speakers from various parts of the State, and from various departments of medicine. The subjects chosen covered as wide a range of useful information as possible, and were dealt with in a popular way. It seems apparent that this method of transmitting sound medical advice to the public is going to be more and more effective, and prove a distinct benefit to humanity, particularly to those who do not have easy access to a doctor.

We wish to take this occasion to thank, in the name of the Medical Society, Station WJAR, the Outlet Co., and the doctors who co-operated so well in giving the following excellent health talks:

May 24, 1928: It was voted that the Secretary be instructed to send a vote of thanks to Station WJAR, the Outlet Co., Providence, for their courtesy in co-operating with the Committee on Education in its radio broadcast of medical talks.

Feb. 8—Posture. Its Importance in Health. Dr. Roland Hammond.

" 15—Care of the Eyes in Children. Dr. Harry Messinger.

" 22—The Modern Hospital. Dr. H. P. B. Jordan.

" 29—Minor Injuries and Their Proper Care. Dr. Peter P. Chase.

Mar. 7—Remarks About Contagious Diseases. Dr. D. L. Richardson.

" 14—Heart Disease in Children. Dr. W. P. Buffum.

" 21—Laxatives and Their Correct Usage. Dr. H. L. Emidy, Woonsocket.

- Mar 28—Importance of Early Recognition of Appendicitis. Dr. M. J. O'Neil.
- Apr. 4—Value of Health Department to a Community. Dr. E. V. Murphy, Newport.
- “ 11—Changes in the Practice of Medicine. Dr. C. V. Chapin.
- “ 25—Value of Periods of Relaxation and Rest. Dr. Alex M. Burgess.
- May 2—Health Work in Industry. Dr. John Pinckney.
- “ 9—Milk Supply in Providence. Dr. Reuben Bates.
- “ 16—Rabies. Dr. Joseph Smith.
- “ 23—Proper Care of the Teeth. Dr. A. E. Seal, Pawtucket.
- June 6—Unhealthy Mental States; How to Avoid Them. Dr. Arthur H. Harrington.

Respectfully submitted,

ELIHU S. WING, *Chairman*

Report of the Proceedings of the New England Medical Council

During the year there have been held two meetings of the Council, on June 24, 1927, in Portsmouth, N. H., and on November 4, 1927, in Boston.

At the first meeting, the matter of the Woman's Auxiliary of the American Medical Association was presented by Mrs. John O. McReynolds of Dallas, Texas.

This movement began in Dallas during the World War, and has grown until it has been organized in twenty-seven states, and has been recognized by the House of Delegates of the American Medical Association. It has now between 8,000 and 10,000 members. Its object is to bring about closer social contact among the doctors and the wives, and to help the doctors in every way possible.

The Council voted to endorse the movement for the promotion of a Woman's Auxiliary in each state in New England, and the counties as far as possible.

A paper on "Medical Education" was read by Dr. Charles F. Painter of Boston, and one on "Doctors In and For Rural Communities," by Dr. Thomas S. Brown, President of the Vermont Medical Society.

After extended discussion, participated in by most of the members of the Council present, it

was voted to appoint a committee to consider the topics discussed by these two papers, and report at the next meeting.

The second meeting was held on November 4th, as already stated. This committee reported at length, and brought in the following recommendations. These were adopted, *seriatim*.

1. A less rigid separation of the basic or pre-clinical medical sciences from the clinical studies, and a bringing of these preclinical studies into relation with clinical medicine. Students should come into close touch with patients earlier in the course.

2. The radical limitation of required research by the ordinary student in preclinical studies, and a limitation of required research in the clinical subjects to what is essential for a broad education.

3. Simplification of teaching by less attention to the changing technical details, particularly in the specialties, and by better grounding in the fundamental principles of physiology and pathology, not neglecting incipient pathology in relation to clinical medicine.

4. Training in a specialty must be based on adequate general ground work. The usual four years in the medical school is sufficient only for a broad general medical education.

5. The recognition of the importance of physical therapeutics.

6. It is earnestly hoped that the Dartmouth Medical School be placed upon a four year basis.

7. A recognition of the interest of the medical profession and of the community in medical education, and the distribution of physicians.

The subject of reciprocity in licensure between the several New England States was next discussed at length.

It was voted to appoint a committee of six, representing the several states, to consider this matter, and report at a subsequent meeting.

It was agreed that the several members of the Council should report to their respective Societies these proceedings, and that copies of the transactions should be sent to the Presidents and Secretaries of the Societies.

At both meetings all the New England States were represented, and all the delegates entered into the discussions, and evinced much interest.

DR. H. G. PARTRIDGE

May 21, 1928.

A report of the Council meeting held just preceding this meeting was presented by the Secretary.

The action of the Council recommending an increase of \$100 per annum in the salary of the Librarian was ratified by unanimous vote of the House of Delegates.

It was voted to accept and place on file the Treasurer's report as approved by the Council.

Dr. Fulton called attention to the probable need of the Society looking elsewhere for a site for its library and meeting place. He called attention to the fact that the present stock room is nearing its capacity for books, and of the probable restriction in parking space incident to the construction and use of the new Masonic Temple adjacent to our building, and of the increasing noise incident to traffic as a disturbance of our proceedings. On motion of Dr. Brown, seconded by Dr. White, the President was instructed to appoint a committee of not less than five members to investigate the matter of a possible new site for the Medical Library and to report to the House of Delegates at a subsequent meeting, and was so voted, the following committee being appointed: Dr. Frank T. Fulton, Dr. Halsey DeWolf, Dr. J. M. Peters, Dr. J. E. Mowry, Dr. Geo. H. Crooker, Dr. E. S. Brackett.

The President quoted a letter from an insurance firm of Providence relative to Physicians' Liability Insurance to be carried by the Rhode Island Medical Society for the benefit of the Fellows, and called upon Dr. Julian Chase of Pawtucket, who stated that the Pawtucket District Medical Society has had group insurance for its members for several years, but that lately the rates had to be raised. Dr. Chase pointed out that with a larger number of insured physicians possible under supervision by the R. I. Medical Society, that the Fellows of our Society could get this same insurance at a reduced rate. He further pointed out that this action by the State Society would not influence the situation in Pawtucket for the current year, as that Society has already voted to continue its present insurance at the advance rate. He moved that a committee be appointed by the Chair to investigate and report on this matter at some subsequent meeting of the House of Delegates, and the President appointed as a committee to investigate group insurance:

Dr. Julian Chase, Dr. R. M. Smith, Dr. Roland Hammond.

A communication from the Committee on Cost of Medical Care, which is planning a five year study of the factors entering into the cost of medical care, and requesting financial aid to cover the expense of the investigation, was read by the President. As this organization has sufficient funds to meet the expenses of at least the first year of investigation, it was moved by Dr. Partridge, seconded by Dr. Skelton, that the matter be laid on the table. So voted.

Dr. Brown, as editor of the JOURNAL, called attention to the fact that the Library is considerably enriched by the gift of books which publishers send to the R. I. MEDICAL JOURNAL for review, but also pointed out that not infrequently these books after review were not sent to the library as they should be. No action was taken other than that the Chair suggested that the matter was one which should be taken up by conference between the Library Committee and the Committee on Publication.

Dr. Brown spoke in regard to the Women's Medical Auxiliary Association; an organization of wives of members of the A. M. A. organized for the purpose of forwarding the interests of their husbands in the practice of medicine and in allied fields. He suggested that it might be well at some meeting of the Society to invite a representative of the Women's Auxiliary Association of the A. M. A. to address the Society on its aims and activities. The Secretary called attention to the fact that affiliation of the R. I. Medical Society with this organization was considered in 1925, and by vote of the House of Delegates was laid upon the table. The President referred the subject to the Committee on Program.

Adjourned.

J. W. LEECH, *Secretary*

PROVIDENCE MEDICAL ASSOCIATION

The regularly monthly meeting of the Providence Medical Association was called to order by the President, Dr. Edward S. Brackett, Monday evening, June 4, 1928, at 8:45 o'clock.

The records of the last meeting were read and approved.

The Standing Committee having approved their applications, the following were elected to membership: Jay Nathan Fishbein, Ulysse Forget, Constant Engelbert Schradieck, Ubaldo E. Zambarano.

Dr. Charles O. Cooke read a memorial on Dr. Charles Fenner Peckham, and it was voted that this be spread upon the records, a copy sent to the family, and a copy to the R. I. MEDICAL JOURNAL.

Dr. Roland Hammond read a paper on a case of Double Fracture of the Femur.

In this case, there was a fracture just above the knee and another at the junction of the upper and middle third. This was treated with double Thomas splints. Slides showed the results by X-rays, and the patient demonstrated a perfect result.

The second paper was by Dr. Edward S. Cameron on Post-Operative Massive Collapse of the Lungs. First he spoke on the history.

Plugging of the bronchi with mucus was first thought to be the cause, and later it was ascribed to paralysis of the diaphragm caused by nervous reflex. Limitation of respiratory movements has been ascribed.

Reflex spasm of the bronchiolitis due to vagus irritation is the last theory. All these agree that there is obstruction and absorption of the air. The symptoms may be intensely acute, as in pulmonary embolism, or the latent type may show very few symptoms.

There may be retraction of the chest walls and signs of consolidation over the collapsed lungs with much thick, mucoid sputum. Heart displacement is the most typical sign.

X-ray shows the condition clearly. Recovery may be by lysis, crisis or with complications as broncho pneumonia.

Treatment: Absence of trauma in operation; free breathing; change of position.

Two interesting cases were reported.

The paper was discussed by Drs. Boyd and Chase.

The third paper, by Dr. Wilfred Pickles, was on Regional Anesthesia in Obstetrics, with report of 28 deliveries under epidural block.

This paper was written in conjunction with Dr. Jones, Resident at the Lying-In Hospital.

He treated the history, and described the nerve supply involved in labor. Epidural anesthesia is obtained by introducing the solution through the sacral hiatus. This technique was described.

Anesthesia was complete in 26 cases and in two had to be supplemented.

The average duration was two hours, and in several cases did not last through the labor.

The patients' muscular contractions were generally good, and the perineum relaxes markedly.

The paper was discussed by Drs. Partridge and Brackett.

The meeting adjourned at 10:25 P. M. Attendance 74.

Respectfully submitted

PETER PINEO CHASE, M.D.

Secretary

MISCELLANEOUS

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Further details in relation to this subject are set forth in a pamphlet entitled, "The Feeding of Infants in Diarrhea", and in our book, "Formulas for Infant Feeding". This literature will be sent to physicians upon request.

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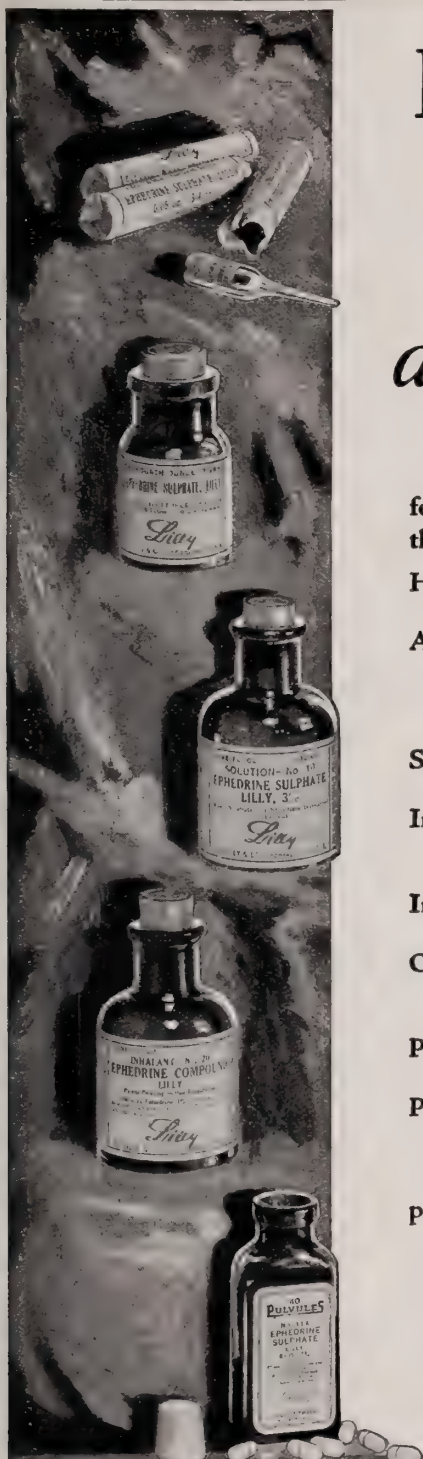
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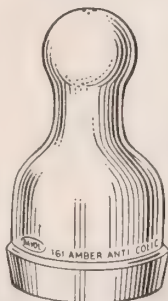
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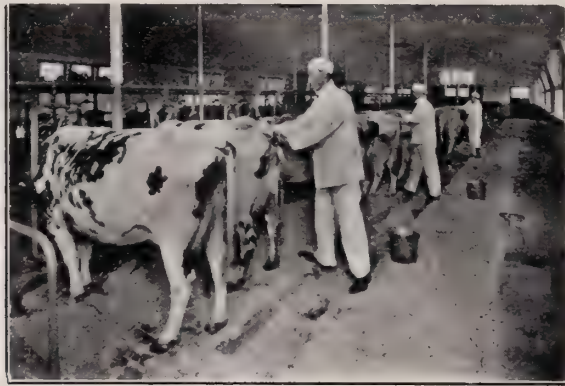
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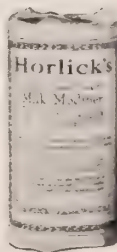
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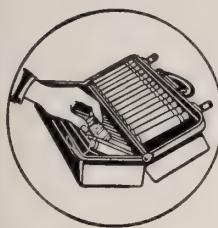
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*(New England Journal of Medicine, April 12th, 1928—page 379).

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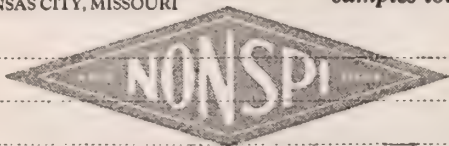
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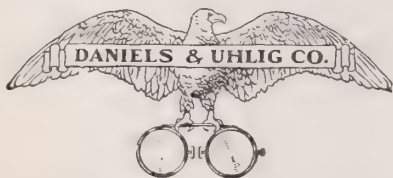
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ORIGINAL ARTICLES

PROGRESS IN PSYCHIATRY IN THE LAST TWENTY-FIVE YEARS*

ARTHUR H. HARRINGTON, M.D.

PROVIDENCE, R. I.

"The present century has witnessed an advance in the field of psychiatry which is unprecedented and has resulted in no less than a complete revolution in our ways of thinking of mental disease." Such are the opening words in the preface to "Foundations of Psychiatry" by Dr. William A. White.

A change has come about in the past twenty-five years in the way we have been thinking of mental disease. We have thought of it as "insanity." We have described it minutely with a large catalogue of names, to label its symptoms, but the great advance has been made in the definite attempt to interpret these outward manifestations in terms that will correspond with the forces which shape the personality. The adequate approach to psychiatry is to-day believed to be found in the biological, psycho-biological, and the sociological factors combined; the doing away, for the purpose of studying human behavior, with the metaphysical distinctions between body and mind.

In medical teaching, and to-day largely in medical practice, the human subject is regarded as made up of different organs, which are studied and treated to a great extent without reference to the fact that they are a part, or one unit of a whole. Such an attitude, no doubt, has been quite natural during the development of specialization in medicine, but progress has undoubtedly been made in the concept of the individual and in the better understanding of behavior by considering the organism as a whole, and stressing the point that we should regard reactions which

seemingly are partial, as manifestations of the whole.

This seems to be at the foundation of what we may regard as the beginning of the scientific era of psychiatry, and in fact should logically apply to internal medicine as well, and by that token, bringing the psychiatrist and the internist into the most advantageous position for correlating their facts. I think it may be truthfully said that psychiatry is the only branch of medicine to-day that deals with total reactions, and that this conception is of comparatively recent growth.

In the lowest forms of life the reactions are all physico-chemical and there is possible only an extremely limited range of adjustment to the environment, such as absorbing energy from the sun's rays or elements from the soil or water for the continuance of life. When we come to higher forms of life with some differentiation in organs, we find the organs integrated and working together by means of a vegetative nervous system and with still greater adjusting mechanisms to the environment. Going up the scale, we come at last to an organism with the first evidence of a psyche, the latter being the result of an evolutionary and biological integration. With each rising step, and with each integration, we find a corresponding capacity for adjustment to, and for making use of the environment, and, at the same time, with an increasing complexity in reactions between the individual and the environment.

The average human being to-day comes into the world with an endowment, which is the result of at least, it is believed, 500,000 years of evolutionary development of the human race with a psyche of the same period of time bearing every trace of untold millions of trial and error. With him have come from the very first the instincts of the race; they have never fundamentally changed. Society, however, has constantly been growing more and more complex, calling in every age for greater and greater sublimations, calling upon the individual to give up more and more of himself for the good of society. We finally have the individual reacting at the psychological level

*Read before the New England Society of Psychiatry at a meeting held at the State Hospital for Mental Diseases, Howard R. I., April 3rd, 1928.

of his evolutionary development, as a psychophysical integration.

Now at the psychological level between the individual and his environment, meaning largely society, occur the adjustments, adequate or inadequate which constitute either the success or failure of the individual at this level. Failure or in other words mal-adjustment may apply to the child, whatever his age, or to the adult whatever his age. These mal-adjustments may mean a disappointed individual, a warped personality, a neurotic, a psychopathic individual, a psychotic individual, a delinquent, a criminal, a vagrant, any one of the homeless habitually unemployed. To-day a broad psychiatry deals with all of these in the field of prevention, adjustment and treatment.

For the first time in history there is manifested a wider interest in disorders of the mind, outside the ranks of the medical profession, than has ever been the case. This shows itself especially in relation to the social aspects of human life. The success of an individual, or on the other hand his failure is explained as attributable to personality factors, which have behind them mental implications; in fact, where social problems are encountered or where failures to make adequate adjustments to environments are found, they are being analyzed in terms of mentality.

Psychiatrists for the first time have recently perceived a field in which they may contribute to the psychiatric needs of the community, and in many instances we see organized efforts in these directions.

In the first place, the psychiatrist, whether engaged in an institution or out of it, is in a position to establish contacts with the community through mental hygiene societies, or other organizations where they exist to-day, and to engage in the educational efforts so necessary before measures of a concrete nature can be entered upon. Already in very many localities educational work in the public is bringing to notice the value of mental health and the great wastage from mental disease and this is making progress in creating an attitude of mind on the part of the public, willing and even eager to accept the help of the psychiatrist in social difficulties and mal-adjustments. To consult a psychiatrist to-day is not to any such extent as formerly an implication of "insanity."

Practical ways of accomplishing active work are seen to-day in the development of clinics for out-patients in connection with hospitals for mental diseases, and also in connection with general hospitals in numerous instances. This development, however, although its great usefulness has been demonstrated in a sufficient number of instances, justifies a far wider adoption of such methods. The number of such clinics is thus far too few.

The establishment of mental health clinics in a community is of inestimable value, because the psychiatrist has the opportunity of detecting the very earliest factors as to the social relationships, economic conditions, and environmental causes of strained relationships in home, or employment and otherwise, which may be the forerunners of a clearly defined mental deviation, which at the moment may be intelligently treated. The progress in psychiatry in such instances is seen in that no psychiatrist, nor even any physician, would probably have had any contact with the patient previous to such community work.

Administrative Boards are already recognizing, here and there, that the mental hospitals have responsibilities toward the communities they serve, aside from the care of committed cases. It is seen to be possible by out-patient clinics, with adequate psychiatric social service, to diminish the number of commitments and through the same agency to reduce the number of residents in a hospital by bringing about social rehabilitations.

Non-medical workers, for instance persons connected with charity organizations and with the church, are being taught, thanks to the many lectures, group talks, and to the literature which is being circulated, that certain behavior observed in the home, the school and other relationships, spells a mal-adjustment and are learning to refer such instances to the psychiatrist. These problems to be understood must see the individual as a whole with all his antecedents, physical and mental, heredity, experiences, education, and their bearing upon the shaping of his personality in a pathological direction.

To-day psychiatry is being recognized as a branch of medicine of the widest scope. Increasing demands are coming from various organizations for its services, for instance in education, health, industry, child guidance, from the courts,

vocational adjustment bureaus, penal institutions, social welfare agencies, and mental hygiene societies. These demands show the progress that psychiatry has been making, even in a very few years, in being recognized by the laity as the only appropriate branch of medicine to take care of these problems. This shows that there is an increasing demand for the psychiatrist, but the ranks are not full enough to meet this demand. It is useless to think of psychiatry to-day defined within fixed limits, psychiatry is no longer static, it has extended so far out from the hospital, that the distinct markings of the frank psychoses have shaded off into the dim lines of what are apparently slight deviations from the normal, which only a few years ago would have been disregarded, but which, nevertheless, may be the basis of a serious social mal-adjustment.

Psychiatry has advanced to that point, where it is recognized that its legitimate field, aside from the hospitals, is in such extra-mural activities as have been stated, therefore it is the duty of psychiatry to see that the field is covered. Our hope lies to a certain degree in the scholarships, and fellowships in psychiatry, which recently have been brought about through contributions by individuals and foundations with the co-operation in the main of the National Committee for Mental Hygiene. But this can supply only a modicum of the numerical and quality personnel required. The fact is that the field of psychiatry has broadened to that degree where special training for work in the various activities and types of clinics, such as have been referred to, is required.

Medical schools do not cover such needs as have been indicated. The authorities at least in one instance have planned,¹ and this should become general, to include in a course in psychiatry lectures on such subjects as mental deficiency, mental mechanisms, juvenile delinquency, psychiatry in relation to crime, the concept criminal, types and purposes of institutional care, psychological tests, child guidance movements, conduct disorders from the psychiatric viewpoint. The psychopathic Hospitals, where they exist in connection with or near medical schools, can be utilized for clinical lectures and observations. This would no doubt go a long way towards making an appeal to the student, attracting him to the specialty of psychiatry.

There is an abundant literature which has been issued within the past few years, which shows that in behavior cases in children there are exhibited the same mental mechanisms as exist in the adult suffering with psycho-neurotic tendencies or psychoses. There could be no richer field for the instruction of the student, than such clinics as this literature is based on.

Psychiatry is concerned in its pathological side with the whole field of human behavior, even from slight evidence of deviation from what may be taken as the normal, to the most exaggerated conduct of a psychosis. Psychiatry must, therefore, take into account all the social factors related to any individual case. The individual is surrounded by an environment which constantly grows more complex as his activities in life gradually take on a widening range. If failure comes it may occur in the child in adolescence or at any subsequent period.

Now we have a new worker, namely, the trained psychiatric social service worker, who has taken the place of older systems, such as would be represented by the often unsystematized methods of philanthropy in which a mistaken sympathy often existed where there should have been some constructive plan.

This worker, with the background of a liberal education, having at least some academic knowledge of the social sciences, must needs be equipped through her special course of training with a comprehensive knowledge of clinical forms of psychiatry and their mechanisms, as Herman M. Adler says,² on the social side with the practices which are taught in regard to housing, education, economics and other matters, such as recreation. She must absorb in a given community a definite knowledge of all agencies which exist in that community for certain needs of the patient which are sure to arise, not only on his individual account but also in regard to all of his interests, his family and his economic relation.

The development of the psychiatric social worker was a necessary sequence of social psychiatry, because there was a definite and specialized form of social service work to be done. On this account there was required one specially equipped for the gathering of data and submitting to analysis the social problems of the patient to the end that the psychiatrist may obtain the only kind of assistance that will be of value to him in

determining the diagnosis and treatment of the patient. The *raison d'être* for the psychiatrist social worker is that the psychiatrist centers his attention upon the patient, the psychiatrist social worker traverses the whole circle of the patient's environment. The psychiatrist social worker, in a wider sense, becomes "a specialist associated with the psychiatrist, and professionally subordinate to him."²

One of the greatest advances which has been made within a few years is a discovery of social psychiatry that mental difficulties of adults, often begin as habits in childhood, as primary and then conditioned fears lasting into adult life, as dreams and fantasies; the prolonging far beyond adolescence of an infantile type of emotional bond of affection for parent; as shyness, seclusiveness, jealousy, sensitiveness; as the spoiled child; all may be forerunners of a socially mal-adjusted or even psychotic adult. These results are being forestalled to-day undoubtedly in a great many instances by the work carried out in "Child Guidance Clinics" and "Child Habit Clinics."

Attempts have long been made to erect a psychiatry based on anatomical changes in the brain, but such attempts were only partially successful, and those that were successful were in connection with changes found in diseases which were of organic origin. The functional psychoses have thus far never been explained by tissue changes in the nervous structures. Ever since 1870, or thereabouts, we have as psychiatrists been busily engaged in the descriptive stages of psychiatry. We have long been content with minutely descriptive psychiatry. This method of study has become a routine and a necessary part of the practice of the psychiatrist, but if we went no farther, we should be left in a static position for all time, because it does not tell us the why of what the patient does or what he says. Until Freud's time no psychiatrists were looking for psychological explanations of psychotic behavior. The psychotic activity behind the acts and expressions of such behavior were described in terms which we became quite accustomed to employing. It seemed sufficient to state that such an such conduct was "stereotyped," "negativistic," that there was "mutism," that some patients were "decorative," some "depilatory," that there was "echopraxia," "echolalia," "incoherence," verbal salad,"

and so on almost *ad infinitum*. Whatever one's personal opinion about the claims of the psychoanalyst there is no question but that the psychological and therapeutic methods of Freud have had the effect of turning the attention from the more obvious manifestations, which have been our chief point of attack, towards the effort to find out the meaning of symptoms. For instance, —in an actual case a patient suddenly dashes his head against a heavy wire glass panel of a door, with such force as to shatter the glass and lacerate his scalp. At one time in the care of mental cases we would have dressed the wounds and would have protected the patient from a chance to repeat his act. The patient would have been regarded probably as suicidal and a close oversight placed over him for an indefinite time. In this instance first care was given the patient. In a prolonged interview it was finally brought out that he had since his youth been ashamed of his small size. But the real disturbance of his mental equilibrium has been of years duration. It is that his genitalia have never developed beyond the juvenile type. His act was an attempt to escape from the exposure of his person before others on a bathing day. This is an instance of a simple case that did not offer great difficulties in getting at the root of the matter, but it points out that the ideal course is to learn the why of behavior if possible.

The psychology which has been the outcome of Freud's method shows how thin the partition is which separates the healthy from the neurotic, the neurotic from the psychotic. The mental mechanisms which have been evolved from modern psychology have shown that the cleavage between mental health and mental disease is not so sharp. In sleep even the personality may be changed into a primitive semblance; the unfulfilled wish may surge to the fore. Our evidence of progress is that through modern psychology we have a better understanding of the so-called insane than ever before. The conduct of the psychotic has ceased to be so senseless to our minds, the "word salad" has a meaning, if we can only find it.

It does not seem that the technique of psychoanalysis can be of value in the essential psychoses, but from what the literature reveals we may conclude that in hysteria, in anxiety states and in

compulsion neuroses, this therapy may be of value in some cases. Not only the school of Freud, but that of Adler and Jung, it is generally conceded, are contributing something to psychiatry.

The practical application of psychiatry to problems which arise in connection with criminal laws is attracting the attention of jurists as it never has before. The question of "insanity as a defense for crime" has furnished a subject for contention between the medical and legal professions since the middle of the last century. Attempts have been made in England to draw the medical and legal professions nearer together, but have not succeeded, as far as material change in the laws is concerned. In this country we are fortunately making progress. For the legal profession and the psychiatrists, as represented by the American Bar Association, the National Crime Commission, and the International Prison Congress are in agreement that procedure should provide for the study of the individual offender by properly qualified and impartial experts co-operating with the Courts.

At a National Conference called by that National Crime Commission and held in Washington, D. C., in November of last year, one whole session was given up to the general subject of "Substitution of Scientific Mental Examination of Prisoners for Present System of Paid Expert Testimony," in which the legal and medical points of view were discussed. While there are differences of opinion, they seem to rest on the part of the legal profession, on the legal aspects of the law in respect to the conception of responsibility. However, the conception of the psychiatrist that it is not the crime but the individual criminal that should be the factor in determining what should be done with him is apparently gaining ground. That is, the psychiatric view-point concerning these offenders is beginning to be sought by the Courts. How to obtain such accurate and technical knowledge as a court and a jury need in criminal cases has been the stumbling block. It will never be solved by the summoning of paid and partisan experts, nor by the hypothetical question which either side can erect to suit itself. It is a question of procedure as to how reliable and non-partisan medical evidence can be introduced.

Massachusetts has taken a long step forward in the direction of simplifying this problem. In 1921 a statute was passed by the Massachusetts Legislature, known as the "Briggs Law," which provided that when a person is indicted by a grand jury for a capital offense, or if known to have been indicted for any other offense more than once, or previously convicted of a felony, and is indicted or bound over for trial, the Clerk of the Court or Trial Justice notifies the Department of Mental Diseases. This Department has an organization of which a Director for Examination of Prisoners is the head. This division under the Department of Mental Diseases operates throughout the whole state. Every person accused of crime or offenses as mentioned is given an examination as to his mental condition, then a report is filed with the Court as to the results of the examination by the psychiatrists, which is accessible to the court at the trial.

By this procedure it is possible for every justice of a court to be put in possession of an opinion, furnished by qualified psychiatrists, as to the mental condition, sane or insane, of every prisoner such as has been indicated, who comes before him. The law is working, I am informed by officials, in a highly satisfactory manner.

Statistical data as to results are highly interesting. They will not be gone into here, except to state that up to a certain date, of 382 persons examined 31 were reported as "insane." In only one instance, according to Dr. Overholser,³ Director of the Division for Examination of Prisoners, did a judge, despite the evidence, find the defendant sane and sentenced him to State Prison for manslaughter. "The psychiatrist's report was justified within a few months, however, when the prisoner manifested symptoms, threatening fellow prisoners, and accusing them of conspiring to injure him, then, but not till then was he committed to the State Hospital for the Criminal Insane."

There have been Juvenile Courts in various parts of the country and a probationary system in connection with them for years. The introduction of an organized clinic for the purpose of bringing to the aid of the justices of such courts a personality observation and a careful evaluation of the social surroundings of the juvenile, by the personnel of a psychiatrist, a psychologist and a

psychiatric social worker, is another step in the progress of applied psychiatry of recent development of far-reaching importance.

It was about seventy-five years ago that General Paralysis was recognized as an entity. Its relation to syphilis as a cause was suspected years ago, but never proved until within a few years by means of the Wassermann and other serological tests. We have progressed in the early and positive diagnosis of the disease and thereby also in its earlier treatment. Arsphenamine and other forms of arsenical preparations, have seemed in an appreciable number of instances, in my experience, to delay the malignant progress of the disease, prolong the life of the patient and even, in a number of cases, economic productiveness. But on the whole results have not shown the degree of benefit anticipated at the very first. Of the malarial treatment of General Paralysis in the hands of some, the results warrant a thorough trial.

Studies in epilepsy have centered around both the organic conception of its cause, while on the other hand its genesis is looked upon by some as residing in the personality of the individual. On the organic side it has been held that disordered metabolism, or parathyroid insufficiency may exist in these cases, but as common factors they do not seem to exist in all cases studied.

The treatment of epilepsy is hygienic and dietetic with phenobarbital as the usual medication with or without the combination of other usual remedies. The former has given encouraging results in being followed by a reduction of the number of seizures in a good many cases and apparently with their cessation in some instances, but no absolute cure is hardly to be claimed.

We are beginning to recognize that disturbances of the internal secretions may have a bearing upon mental disorders. Robertson states,⁴ "If the future holds for us a great therapeutic discovery in the domain of mental disease, it will probably be found in a knowledge and control of internal secretions."

Under the head of "Individualization" we may treat in a brief way of a number of conditions and therapeutic measures, which in hospitals for mental diseases, with their great numbers of patients, are bringing patients *individually* into closer touch with definite agencies for their care,

treatment and rehabilitation. During the past twenty-five years these great institutions have been growing more highly organized. In hospitals which are striving to meet the requirements of the individual patient, and where there is being furnished, on as adequate a scale as can be obtained, the means to meet such requirements, there is an ideal. In working towards this ideal, always providing for the maximum of co-operation, the organization is being divided into units as to its numerous activities. As a result medical staffs of hospitals for the mentally-ill, are being increased numerically. There are units of medical service comprising as heads the medical director, the clinical director, the clinical psychiatrist, the psychologist, the psychotherapist, the pathologist, the serologist. Then comes the physical therapy department, the occupational therapy department, the social service department, the out-patient department, and there are others. As a result, there has come about a more critical study of each patient, physically, mentally and socially, than was ever the case before. Indications for special treatment, whether it has to do with purely medical measures or means for the patients' re-adjustment, whether within or without the hospital, are more positively realized.

Occupational Therapy is a medical measure and should never lose its place as such in the organization of the hospital. A gain has been made in this branch in that there is a demand for a highly intelligent and highly specialized person to be at the head of the department but subordinate to the physician.

While on this subject of "Individualization" I wish to speak of Music as a valuable therapeutic aid in hospitals for the mentally sick. I am not speaking of music as a means of entertainment, though that has its place, but I am claiming for music an important place in the therapeutic scheme. Its value is derived from having the patients, themselves, take part in producing or engaging in some form of musical expression. The best and most adaptable form is singing *ensemble*.

Under proper direction they will learn to sing with the greatest amount of expression. The therapeutic value is derived on the physical side from the increased intake in oxygen, the muscular movements, and the stimulation of the circu-

lation. On the mental side there is the training of the attention and the co-ordination of each individual with the entire group. The selections to be sung should be of a high standard as to character and sentiment. Suffice it to say that experience has shown that a systematic program of musical therapy has undoubted value. This is little realized in general. To be carried out the musical department should be in charge of a musical director, who is a musician, and who can bring to the work a psychological appreciation of the intellectual, the ethical and the aesthetic value of music.

Physical Therapy in its various forms, such as hydrotherapy, the use of light and heat radiation, and the varieties of electrical currents that are in use not only have potential properties for benefiting physical conditions, but they serve a purpose in the "Individualization" of the patient, to which I am calling attention.

The standard of Training Schools for Nurses in hospitals for mental diseases has taken rank with that of the training schools of the general hospitals. Officials of training schools in general hospitals are realizing the importance of securing affiliation for their pupil nurses with hospitals for mental diseases.

In the period included in this paper we have seen a remarkable instance in which a single individual has been the author of a movement which has had its beginnings outside of the medical profession, and has swept across the world. I refer to Mr. Clifford W. Beers and the Mental Hygiene Movement. The story of Mr. Beers is too well known to repeat it here. Mental Hygiene or some similar movement would in all probability have come later, perhaps through the requirements of the World War. Nevertheless, Mr. Beers was the sole individual who arrested the attention of the reading public, through his book, "A Mind That Found Itself," which was published originally with the object of bringing about an improvement in the care of the insane. Out of this grew the constructive plan of forming a society for Mental Hygiene.

The first society was that of the Connecticut Society for Mental Hygiene, founded in 1908. There followed the next year the formation of the National Committee for Mental Hygiene, and in the following years societies for Mental Hy-

giene, have been founded in nearly every state, with affiliations with the National Committee for Mental Hygiene. Furthermore, Mental Hygiene as an organized movement, has spread to foreign countries. I do not need to go into further detail. What I have in mind is—how can we formulate an expression of the relationship of Psychiatry to Mental Hygiene? Physical Hygiene rests upon the Medical Art which is contributed to by the exact sciences. In the same way Mental Hygiene rests upon that branch of the medical art which is psychiatry, with whatever is contributed to it by any of the scientific social sciences. Now we see under the name of "Mental Hygiene," which we rejoice to say has become a household word, the principles of mental health which rest upon psychiatry, penetrating even into nearly every village. Under the name "Mental Hygiene" psychiatry is being carried into the schools, and into the higher institutions of learning, as witnessed in the program which Dr. Arthur H. Ruggles is building up and reducing to working principles in Yale college and elsewhere. We see Mental Hygiene being taken into the field of industry. There are many ways in which under the agencies of the National Committee for Mental Hygiene practically every field which affords an opening for extending the work of mental hygiene with the psychiatric background is being entered. It would seem, therefore, that the relationship which I am trying to formulate might be expressed by stating that Mental Hygiene, whether it deals with mental health or mental disease, is socialized psychiatry aiming at the maximum degree of its socialization.

The writer has attempted to treat this topic in a brief way from the biological standpoint, on the one hand and on the other from that of applied psychiatry, bringing out only a few outstanding features. The last quarter century is, I believe, the very beginning of the scientific era of psychiatry. We have approached it by painful stages. We have passed through the "demonological" stage; through that in which mentally-sick were treated as criminals; through the philanthropic and humanitarian periods. Ignorance and fear have at last given way to an understanding of the so-called insane. The asylum has generally been replaced by the hospital. Modern methods

and the growing demand for the psychopathic hospital show the passing of the fatalistic attitude toward all mental disease. Prevention has become ideal with the emphasis placed on the early years of childhood.

Psychiatry very curiously presents a paradox. It is a branch of medicine, yet it is all inclusive, because it must regard the totality of the organism and all its reactions.

We may regard this first quarter of the twentieth century as a period from which we may look back upon a world of error, as regards mental disease, from which we have been gradually emerging. We are now beginning to advance with a justifiable optimism for the future of psychiatry. The task ahead is a momentous one, but it is an enterprise for which there has been no match in the history of the world. Its very uniqueness is a stimulus which will never allow us to lag in pressing forward to the "Ideal of Knowledge."

¹C. P. McCord, *American Journal of Psychiatry*, Oct., 1925.

²Herman M. Adler, *American Journal of Psychiatry*, April, 1927.

³Report of Proceedings, National Crime Commission, Nov. 2, 1927.

⁴London Lancet, July 17, 1926.

OBSTRUCTION TO NASAL BREATHING

BY DR. L. L. ALBERT

YONKERS, N. Y.

The maintainance of unobstructed nasal breathing must be considered both from a subjective as well as from an objective point of view. Unobstructed nasal breathing is an important function of the human body. Obstruction not only will cause material interference with an individual's activity and happiness in life, but also will cause more or less serious pathological changes.

The nature of the obstruction may be either of physical or neurogenic origin. The latter are usually intermittent and temporary, as in certain cases of asthma. Obstruction may be within or without the nasal cavity itself or the naso-pharynx. Obstructions within the nose rarely come from the upper or lower walls (roof and floor of

the nasal cavity), but commonly from the lateral walls and turbinates and from the median wall or septum.

Air passing through the nasal cavity normally meets a certain amount of resistance from the turbinates. If the turbinates are enlarged, the movement of air is retarded and the unit-quantity of air which passes through the nose at one time is greatly diminished. Experiments have shown that the greatest part of the air passes through the middle nasal space. Obstruction in this region, therefore, is usually of more serious import. Where both the inferior and middle nasal spaces are obstructed, however, clinical experience shows that by removing only the tip of the inferior turbinate, free nasal breathing almost always can be re-established. This is not the case if the middle nasal passage only is cleared.

Most cases of nasal obstruction to breathing are caused by hypertrophy of the inferior turbinates. These turbinates are, therefore, the most common object for surgical or medical attack, their removal being indicated when the hypertrophy interferes with proper nasal breathing. The physiological functions of the nose suffer in no way by the removal of the tips of the turbinates.

The turbinate obstruction may be temporary, as in engorgement of the cavernous erectile tissue, or permanent, as in actual hyperplasia. The treatment should be the same in both instances. The mucosa of the inferior turbinate may be thickened at either end (anterior or posterior) or along its entire length. Enlarged posterior tips are common. They are frequently overlooked, however, as they are somewhat difficult to see on routine nasal examinations. They act as valves in the posterior nasal openings and cause obstruction wholly out of proportion to their size. While these enlarged tips are removed best with the cold wire snare, the remaining mucosa if uniformly thickened is removed best with scissors. The galvano-cautery is applied only in cases of uniform flat swelling of the mucosa.

Other cases of enlarged turbinates are caused not by the thickened mucosa, but by the shape and curvature of the turbinate bones projecting into the nasal cavity. In such cases, parts of the bone also must be removed. Experience, only can teach us how much to remove. It is rarely necessary to remove any part of the middle turbin-

ate either on account of enlargement or deformity. Turbinates should never be removed for such temporary conditions as rhinitis or acute sinusitis.

Polypi act as obstructions even when very small. As they are usually pedunculated, they swing back and forth with the air currents. They may extend to the inferior turbinate, the nasal floor or even outside the nostrils. They, also, are removed with the wire snare.

Lupus and gummata may cause obstruction by infiltration of the nasal mucosa, especially of the septum. Scleroma, also, may form solid pads on the turbinates.

The nasal septum should be a uniformly even surface standing vertically in the sagittal plane of the head. It rarely has this ideal shape but deviates to either one or both sides. The concavity of one side corresponds to the convexity of the other. The nasal cavity is therefore diminished on the convex side. The common operation for relief in such cases is the septal submucous resection. In very difficult cases, the window resection can be employed, establishing a large window and removing both layers of mucous membrane together with as much cartilage and bone as may be necessary. It is only the small irregular perforations of the septum which are troublesome. Large perforations of the septum in an otherwise healthy nose are harmless.

Ridges, spines and spurs occur on the septum and may cause obstruction to nasal breathing. They are usually located anteriorly, but they also may extend as far back as the rostrum sphenoidalis. They may be either cartilaginous or bony. They obstruct according to their shape, size, and location. They should be removed if giving trouble.

Hematomata and abscesses of the septum cause obstruction and are usually due to trauma. As a rule they occur in children. Cancer is rarely found in the septum.

Atresia of the posterior nares is often congenital, but may also be acquired through scars and adhesions. Nasal secretions, such as pus or dried crusts, also may produce sensations of breathing obstruction. This latter occurs in certain cases of ozena where as a matter of fact the nasal space is often extremely large.

Obstruction to nasal breathing is sometimes due to the presence of foreign bodies. This is

often seen in children in whose noses the foreign body obstructions have gone unrecognized for years. Rhinoliths of organic and inorganic constituents are found in the nose, usually on one side only.

Outside the nose itself, enlarged tonsils with adenoid growths are, especially in children, a very common cause for obstruction to nasal breathing.

In adults, the naso-pharynx is a favorite site for gummata. Suspicious cases should have a blood Wasserman examination.

Bearing these various possibilities in mind, there is no reason why the majority of patients suffering from obstructed nasal breathing may not readily and properly be differentiated and treated.

MISCELLANEOUS

COMMERCIAL PREPARATIONS OF DIPHThERIA TOXIN-ANTITOXIN

The value of toxin-antitoxin administration in protecting against diphtheria is well established by an abundance of reliable evidence. The results outlined by Paul S. Rhoads, Chicago (*Journal A. M. A.*, Jan. 28, 1928), emphasize, however, that to obtain good results the potency of commercial preparations employed must be controlled carefully. From the results reported, the necessity for Schick retests three months after the last dose of toxin-antitoxin and more immunizing doses when they are indicated is evident. Wide variations were found in the potency of commercial preparations now on the market, and in some instances there was even considerable difference among the lots made by the same manufacturer. Banzhof has pointed out that the new mixture containing 0.1 L + dose per cubic centimeter deteriorates with age more rapidly than the 3 L + dose preparation. In the tests on preparations B and D, the expiration of potency dates were as far removed from the dates of the tests as in the cases of preparations A and C. The time element does not account for the difference in potency here. When large numbers of toxin-antitoxin immunizations are to be done, it is advisable to make tests for potency on the particular lot of toxin-antitoxin to be used before the work is undertaken.

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EDITORIALS

THE "POISON" IN ILLICIT LIQUOR

In recent years statisticians have noted a general increase in the number of deaths supposedly due to alcoholism. This has been attributed to the greater toxicity of the alcoholic liquors which are now generally used, as compared with the "good old pure liquors" of pre-prohibition days. There have been frequent comments regarding the so-called "poison element" in the liquors obtainable, which are chiefly of an illicit character.

Some interesting observations and studies have recently been made in Massachusetts, under the supervision of the State Department of Public Health, which throw an important light upon this problem. For many years the laboratory of the Division of Food and Drugs has had charge of the examination of all specimens of liquor brought in by the police in connection with possible prosecution for illegal sales. In recent years the number of samples has increased to between 8000 and 10,000 annually. This enormous material has offered a real opportunity for studying the actual character of illicit liquor in common use. It is fair to assume that conditions in Massa-

chusetts are not essentially different from those in other communities where there is any appreciable amount of illicit liquor.

Mr. H. C. Lythgoe, the Director of the laboratory, has reported on the chemical examination of the many samples. It was thought that perhaps the new and strange methods of concocting the more recent alcoholic beverages might result in the production of unusually toxic substances that would not be detected by the older methods of chemical examination. Accordingly 100 samples of liquor were turned over to Dr. Reid. Hunt, Professor of Pharmacology at Harvard Medical School. He made a very elaborate series of animal experiments for toxicity, with careful controls.

From both the chemical and the biological examinations the only real poisonous substance found in the samples was *ethyl alcohol*, and the toxicity of the various samples was found to be closely parallel to the ethyl alcohol content. In fact a sample of genuine, bottled-in-bond whiskey was found to be more toxic than any of the illicit liquors except possibly three samples. This was evidently due primarily to the high content of ethyl alcohol. Speaking generally therefore, in Massachusetts at least, the usual illicit liquor was on the average far less dangerous to life than the "pure" pre-prohibition liquor.

Extraneous substances such as methyl or "wood" alcohol, methanol, furfural, etc. were present as a rule in amounts that were not of serious import. The proportion of these substances has been very largely exaggerated in popular accounts. Also the importance of methyl alcohol in small amounts has been grossly exaggerated. According to Hunt methyl alcohol actually dilutes the other alcohol, so that animals tolerate larger doses of some mixtures of these alcohols than of either alone.

In other words the increase in the number of deaths from alcoholism is apparently not due to extraneous "poison" in the liquor obtainable, or poisons developed during the course of rapid or careless preparation of these liquors. The problem is not one of "good" or "bad" alcohol, but is primarily one of ethyl or "pure grain" alcohol content.

The reason for the increase in alcoholic deaths in recent years, which is a fact and not a theory, is not entirely apparent. Dr. G. H. Bigelow,

Commissioner of Public Health in Massachusetts, suggests that it may be a result of changes in the drinking habits of the community. He believes that more liquor is now being consumed in a shorter period of time than previously, and many people feel that when liquor has been analyzed and found to contain nothing more toxic than ethyl alcohol that the product can be consumed with impunity. The general public does not seem to realize that ethyl alcohol, even when "pure" is a potent drug, and when taken repeatedly and in high concentration may have very serious results. A fact very frequently overlooked, according to Hunt, is that a person deeply intoxicated is near death, and that a dose of alcohol only slightly greater than that necessary to cause profound intoxication may be a fatal dose.

SIC JUBE O

In the maze of statistics on almost every conceivable subject in medicine and affairs in general we have none on the important subject of recalcitrance on the part of patients. Even in the more or less unclassified facts and figures on cancer we have never seen either figures or dissertation as to the probable number of cases that might have done well had they followed the advice of their physician. The writer can recall quite a few such cases, some of them now going on and if he, in such a strictly limited experience may recount a few the number in our large clinics and in general must be very large indeed. Of late quite a few speakers have urged more thorough examinations, early operation etc. etc. but we do not know how many patients have delayed availing themselves of the latest advances in scientific medicine until the earliest possible moment has advanced into the problematic or hopeless stage. It is difficult to know to what extent one should go in his oratorical urgings or his plaintive pleadings with a patient who presents himself with what is obviously an early malignancy. Success in such a case depends on the histrionic gifts of the medical man as opposed to the patient's inability to realize the possibilities of the case or his cowardice at entering upon an experience which is at the worst of but a little pain and inconvenience. The responsibility of those who give advice upon health matters is very great, and in

many instances those who oppose medical opinions and win a vacillating and wavering consent to gratify the ignorance of a so-called friend are guilty of the death of the patient with its concomitant social and economic losses.

What of physician who does not study his man and with all possible keenness convert him to the rational view of his own condition,—if the thing is possible and what of the patient who calmly makes up his mind to accept what comes without thought for the outcome. The former does not do his professional duty, the latter exercises his right to do as he pleases and takes his life into his own hands, hands which are not fit for such a trust.

It may be that this phase of medical thought is the result of the child who is allowed to do as he pleases throughout his youth, who admits no authority and whose parents have not studied to mold his mentality and mint a mind which is capable of self reasoning and mature thought.

But it is not only in the study of the problem of malignancy that the scientist finds himself confronted by lack of co-operation, but in many other conditions which readily suggest themselves. It may be the proud beauty who will not wear glasses and sustains severe injuries because of lack of proper vision, or one who will not have the appendix abscess drained because he has not the requisite pain, or the banker with the too well filled figure who overdoes in his exercise or the blood pressure case who fails to align himself strictly with the rules of his physician suggests or with his own common sense. Or peradventure the diabetic who indulges, or the alcoholic who takes a few too many,—and there are many others. Perhaps one can do no more or better than to tell them firmly and plainly just what the possibilities are and here ones richness of vocabulary may save a life; and quote Scripture. Passage,—“This do, and thou shalt live.”

AGE OVERTAKES THE PHYSICIAN

Conferring the degree of M.D. does not immediately render the recipient a master of the art of medicine. Several years of experience as an interne in a hospital are required before he is allowed to practice. Even then his education is incomplete. He steadily gains in experience from

contact with patients in hospitals, dispensaries and in private practice. His knowledge is increased by study of books and journals and by attendance at medical meetings and conventions. Finally there emerges as from a chrysalis, the trained physician, wise in judgment and experience. Through years of strenuous training he has learned to do his duty regardless of his personal need for sleep, exercise, recreation and regular nourishment. The necessities of his patients constantly take precedence over his own welfare. Too often he succumbs to some infection because his resistance has been lowered by long continued personal neglect. When age overtakes the physician it often finds him mentally or physically handicapped as the result of his strenuous training.

The physician who succeeds in maintaining a reasonable degree of personal health finds his declining years the happiest and most useful of his life. The skill acquired from many years of practice, the knowledge gained from many years experience, the tact resulting from innumerable personal contacts render his conduct gracious, his judgment accurate and his opinion precise. Loved, honored and respected by all, the aged physician fills a most enviable position in the community.

A CASE OF DOUBLE FRACTURE OF THE FEMUR*

BY ROLAND HAMMOND, M.D.

PROVIDENCE, R. I.

The following case is reported because of the unusual mechanical problems presented in a case of double fracture of the femur, where the upper fracture occurred at the junction of the upper and middle thirds of the shaft and the lower fracture occurred just above the knee.

E. T. Age 56. Was admitted to the Rhode Island Hospital on September 24, 1926, with a double fracture of the shaft of the right femur. While running to a fire, on the right hand side of the road, he was struck by an automobile from behind and thrown violently to the ground. Ex-

*Read before the Providence Medical Association, June 4, 1928.



FIG. 1.—Double Fracture of Right Femur, antero-posterior view, after being put up in Thomas splint.



FIG. 2.— Double Fracture of Right Femur, lateral view, after being put up in Thomas splint.

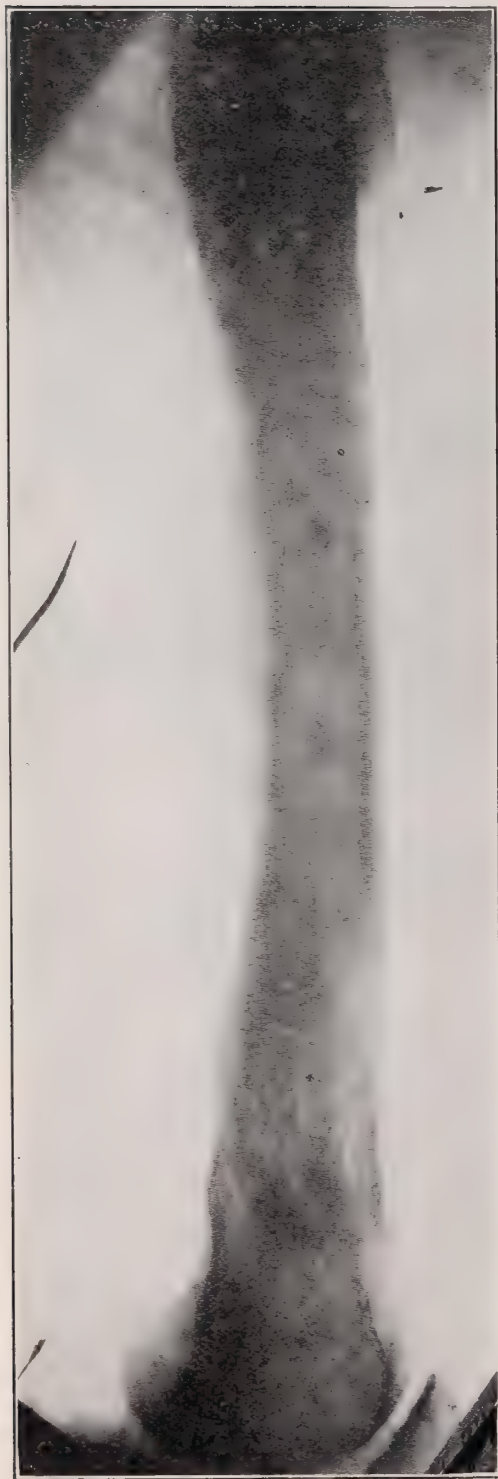


FIG. 3.—Double Fracture of Right Femur, lateral view, final result one and one-half years later.

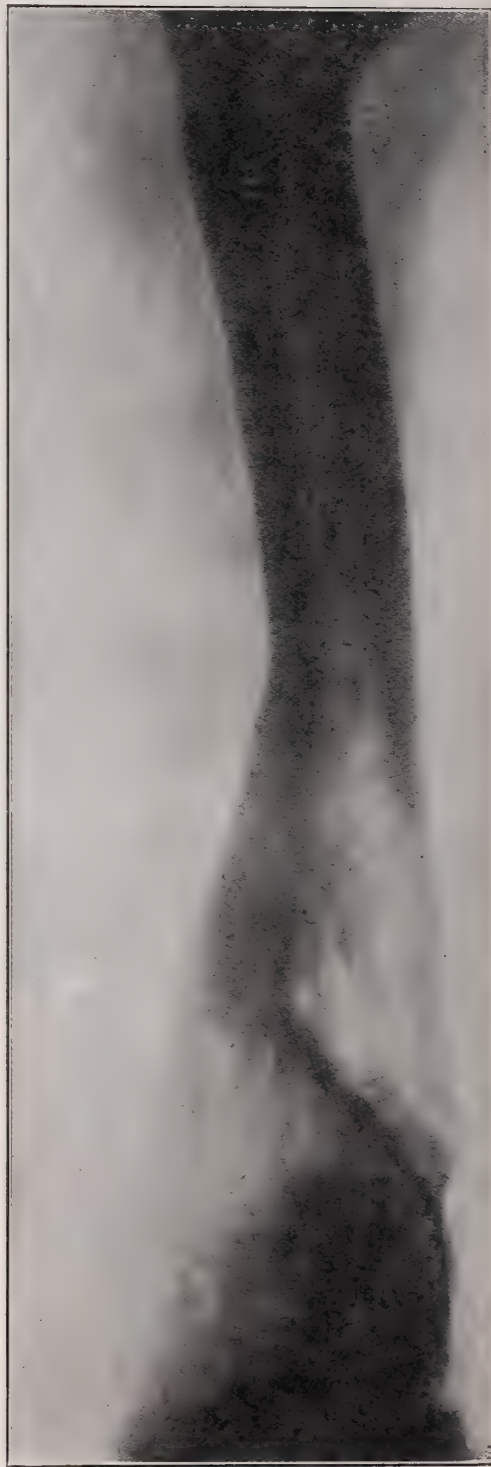


FIG. 4.—Double Fracture of Right Femur, antero-posterior view, final result one and one-half years later.

amination at the Hospital showed the right leg to be $4\frac{1}{2}$ cm. shorter than the left, and the foot was everted. There was marked tenderness and spasm all over the thigh with crepitus just above the knee and at the junction of the middle and upper thirds of the right femur.

On the following day, under ether anesthesia the fracture was reduced and both legs put up in elevation and abduction on two Thomas splints with a Balkan frame. In order to secure the necessary counter traction with the ring of the Thomas splint against the tuberosity of the ischium, a special Thomas splint was made and applied. It required also some special changes in the Balkan frame. Weights were gradually increased and in ten days the leg was down to length. Four weeks later X-ray examination showed good position of the fragments and a moderate amount of callus formation. On December 25th he was allowed up in a chair and a month later was walking with crutches. There still remained considerable stiffening of the knee for which he was given diathermy, massage and gymnastic exercises. Since there remained considerable stiffness of the knee he was given gentle manipulation under gas-oxygen anesthesia on June 22, 1927 and on September 23, 1927. On January 20, 1928 the right knee was again manipulated and the few remaining adhesions broken up. On March 5, 1928 examination showed the length of legs equal or with perhaps $\frac{1}{4}$ " shortening. The right knee could be flexed to 80° . The right lower extremity was practically straight, while the left side showed some general outward bowing throughout. The final X-ray shows both fractures healed with slight deformity.

The interest in the above case lies in the fact that the fractures at two locations in the femur called for a different mechanics in the case of each fracture. In the treatment of a fracture at the upper third of the femur it is necessary to put the leg in elevation and abduction and better results are obtained if both legs are put at the same angle in order to fix the pelvis. Fracture at the lower end of the femur usually requires some flexion of the knee, which was probably not necessary in this particular case. It also shows the necessity of modifying apparatus to meet the needs of an individual case to meet the special problems involved.

This case was under observation and treatment for nearly two years, and the writer is strongly of the opinion that all fracture cases should be kept under observation until complete functional result is obtained or until it is shown that such a result cannot be attained.

(This patient presented himself before the Association; he could execute all movements required of him with no evidence of discomfort and walked with no perceptible hesitation or limp.—Ed.)

OBITUARY

CHARLES FENNER PECKHAM, M.D.

Charles Fenner Peckham was born in Providence September 11, 1869, the son of Dr. Fenner H. Peckham and Mary H. Olney Peckham. He died at his summer home, Warwick Neck on August 19, 1927, in his 59th year, following a cerebral hemorrhage.

He was educated at the Mowry & Goff school in Providence and at the College of Physicians and Surgeons in New York City, from which institution he was graduated with the degree of M.D. in 1891. His father and grandfather were both doctors and both served in the Civil War. For many years Dr. Peckham was associated with his father in the general practice of medicine.

Dr. Peckham was active in the military affairs of the State of Rhode Island. During the Spanish War he served with the Naval Reserve. On July 1, 1896, he was commissioned Lieutenant and Surgeon, R. I. Naval Battalion and served as such until December 18, 1900. He was on leave of absence in U. S. Volunteer Service in the war with Spain from June 29, 1898, until September 20, 1898. On January 15, 1902, he was again commissioned Lieutenant-Colonel and Assistant Surgeon-General of Rhode Island. He was honorably discharged on May 1, 1909, and was commissioned Major and Surgeon, Medical Department, Rhode Island National Guard. On February 23, 1910, he was commissioned Colonel and Surgeon-General of Rhode Island and served as such until September 29, 1915, when he retired with the rank of Brigadier-General.

He was elected a member of the school committee from the fourth ward to fill out an unexpired term on March 29, 1913.

Dr. Peckham was one of the charter members of the R. I. Commandery, Military Order of Foreign Wars, which was instituted on February 28, 1900. In this organization he served as Commander for many years and later as Emeritus Commander.

About twenty-five years ago he studied in Europe with Cohnheim and became interested in gastro-intestinal diseases. During the past twenty years of his practice he specialized in this branch. In 1917 he published a monograph entitled, "The Intestinal Putrefactions." In March, 1920, he published an original article in the R. I. Medical Journal entitled "The Thilerium Hominis." In this article Dr. Peckham described the life of a new parasite in the blood.

On January 4, 1916 he married Isabel M. Rhodes who survives him. One sister, Alice Peckham, also survives him.

Dr. Peckham at the time of his death was a member of the Hope, University, and Anawan Clubs, and also of the Army and Navy Club of Washington. He had previously been a member of the Squantum and Warwick Country Clubs.

Dr. Peckham was of genial disposition, popular wherever he went and was beloved by his patients.

Signed,

JAMES H. DAVENPORT, M.D.

CHARLES W. HIGGINS, M.D.

CHARLES O. COOKE, M.D.

MISCELLANEOUS

FACTORS IN HUNGER

What is hunger? Mere introspection will not furnish a tenable answer to this question. The sensation commonly designated by the term hunger is usually referred in a somewhat vague way to the region of the stomach. Physiologists who have studied the demonstrable changes in this organ have discovered that when empty it undergoes intermittent contractions that can often be correlated with the peculiar sensations of hunger. As the stomach empties itself, the ordinary digestive contractions give way to a different type

of muscular reaction—the so-called hunger contractions. Thus the textbooks propose the theory that hunger sensations or hunger pains are caused by contractions of the stomach which presumably affect some as yet undescribed sensory apparatus. There have, however, been challenges to the view that hunger is mainly of gastric origin. Central factors have been held responsible by some critics. It is suggested that a depletion of readily available food reserves in the blood affects the hunger center and that this gives rise to gastric contractions which, in turn, awaken the sensations that are recognized as hunger. Hoelzel,¹ who has investigated the question at the University of Chicago, points out that this explanation fails to account for the periodicity of the gastric hunger contractions. Moreover, Carlson produced gastric contractions by local stimulation in a subject with a gastric fistula. These contractions were experienced as hunger although they were not of central origin. Hoelzel himself ventures to support the possibility of central factors in the genesis of hunger on evidence that the gastric contractions may occur without giving rise to hunger sensation, and hunger may be experienced independent of these contractions. He succeeded in suppressing the desire to eat with an excessive food intake and finding that the subsequent gastric (hunger) contractions were then experienced as local (epigastric) sensations without hunger. On the other hand, hunger was manifested independent of gastric contractions after more or less prolonged abstinence from food. The common reference of hunger to the stomach is regarded by Hoelzel as being largely a consequence of manifestations that are mainly incidental to hunger. Hoelzel suggests that although the feeling of emptiness helps to refer hunger to the stomach, a more fundamental reason for this association evidently is the fact that hunger due to central conditions is ordinarily present when the periodic gastric sensations are manifested. But the epigastric sensations are often disagreeable and usually develop suddenly, while hunger due to central factors is not inherently disagreeable and the exact time of its onset defies introspective analysis. Consequently, he adds, the more prominent sensations in the gastric region are likely to be accepted as the index to hunger. Likewise, headache, weakness, mild nausea or other symptoms may come to be regarded as signs of hunger when they are regularly associated with it.—*Jour. A. M. A.*

¹ Hoelzel, F.: Central Factors in Hunger, *Am. J. Physiol.* 82:665 (Nov) 1927.



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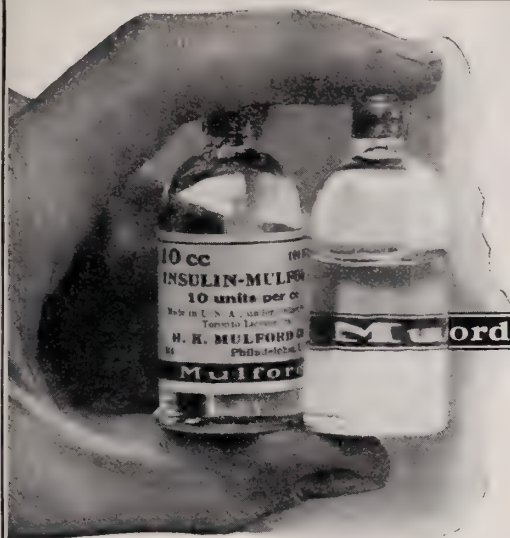


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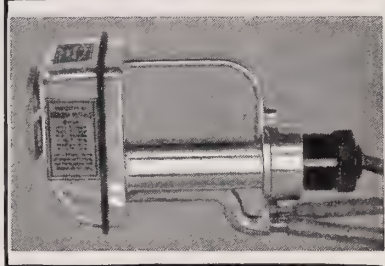
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Statement

from the Committee on Pernicious Anemia of the Harvard Medical School to the Council on Pharmacy and Chemistry of the American Medical Association, published in the J.A.M.A., June 30, 1928.

"AFTER THE DISCOVERY of Minot and Murphy that patients with pernicious anemia were greatly benefited by the daily ingestion of large amounts of liver, and after the extraction and preparation by Cohn, and his co-workers of various fractions of liver containing the active principle effective in pernicious anemia, the Committee on Pernicious Anemia of the Harvard Medical School was formed. This Committee undertook to arrange for the preparation of a potent liver extract in the United States and in certain foreign countries; for the evaluation of its clinical potency, and for the study of its properties, not only in pernicious anemia but also in such other conditions as might be influenced by the chemical substances involved.

"To this end the committee has collaborated with a large number of laboratories and clinics in the United States and abroad which have been interested in one or another of the clinical, chemical or biological problems that have arisen.

"The supervision of the manufacturing of a satisfactory liver extract was considered one of the functions of the Committee. The necessity of feeding a preparation to patients with pernicious anemia in order to determine the potency of the substance has restricted the number of preparations that the Committee could adequately study. It has therefore limited its activities to testing one product in the United States, and to exchanging information with foreign scientists who were in a position to supervise production in their own countries.

"The offer of the firm of Eli Lilly and Company, of Indianapolis, to manufacture under the direction of the Committee on Pernicious Anemia, one of the extracts developed in the laboratories of the Harvard Medical School, was accepted more than a year ago. It was important that the commercial extract should be studied in a large number of clinics over a considerable period of time to discover both its quality and the best mode of using it, before it was released for general distribution.

For five months a satisfactory product was manufactured and tested in 13 clinics in the United States. The results with over 100 cases indicated that a standardized product had been obtained, the distribution of which was desirable and warranted. On February 4, 1928, it was accepted by the Council of Pharmacy and Chemistry of the American Medical Association for the New and Non-official Remedies, under the name of 'Liver Extract No. 343' and placed on sale.

"The demand for this product, seemingly largely for purposes other than those for which it was recommended by the Committee on Pernicious Anemia, appears to have been so great as to have interfered with the manufacturing process that had been satisfactorily employed for over five months. The testing of successive preparations of Liver Extract No. 343 in different clinics collaborating with the Committee revealed that certain lots were considerably weaker than the product manufactured for the five months previously.

"Eli Lilly and Company have collaborated with the Committee in every way by withdrawing the defective material from distribution and attempting to discover what changes in practice might have been responsible for the loss in potency. The distribution of all further material was at once discontinued until such time as the production of material of assured strength should be re-established. It was not possible to reclaim all of the material of weak potency. However only a relatively small amount of such material was not withdrawn when the loss of potency was discovered. The material below standard strength was not in distributors' hands until after about March 1st.

"As a result of recent tests, which demonstrated that material of standard strength has again been produced, it is believed that Eli Lilly and Company can recommence distribution of the standard product on a commercial scale within a month. Meanwhile, the Committee has felt that the interests of the community were better served by a temporary if inconvenient return to the use of liver itself by patients with pernicious anemia, rather than by treatment with an unstandardized product of varying potency."

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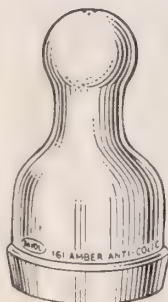
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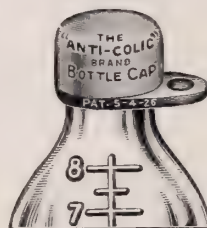
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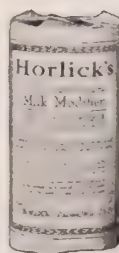
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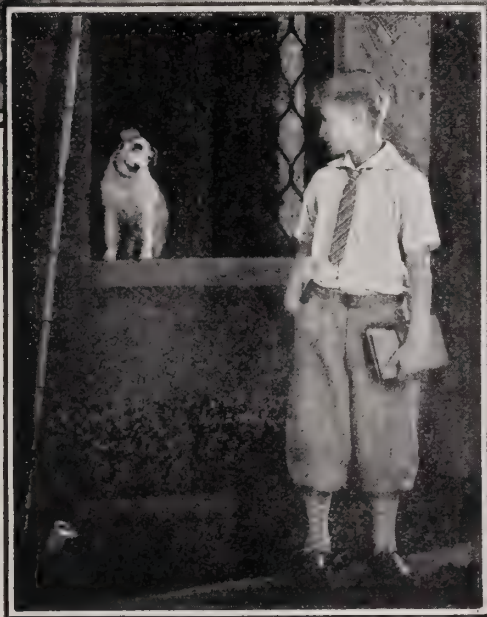
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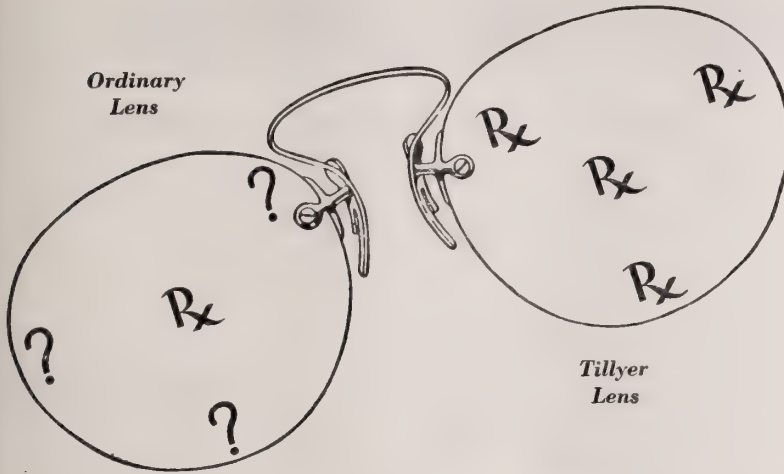
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ORIGINAL ARTICLES

SURGERY IN DIABETICS*

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A few years ago a man of middle age was admitted to the orthopedic service of the Rhode Island Hospital because of a compound dislocation of his left shoulder. A routine history was taken, and a routine physical examination, including urinalysis, was performed. With the exception of the immediate injury, the findings were negative. The man was operated upon—a long ether anesthesia—almost three hours. On the day following operation his condition was good and his urine was negative for sugar, albumin and diacetic acid. Next day a positive sugar reaction was found, and the patient was not so well. Twenty-four hours later the urine showed a complete reduction with Benedict's solution and a four plus ferric chloride test and the patient's condition indicated impending coma. The patient's wife at this time admitted that a glycosuria had been discovered ten years previously, that it had cleared up quickly, and that information concerning it had been withheld to safeguard life insurance. Twenty-four hours later, despite every effort, the man was dead.

This is a common story, and one with which you are all familiar. The incident in question occurred less than ten years ago. You are also familiar with the fact that it would not occur today, and that any time in the course of the illness up to the last twelve to twenty hours, present day treatment would have saved the patient's life. Indeed, we can confidently state that, providing expert medical care is available, it is only very severe diabetes that adds materially to the risk of surgical procedures.

As a result of this state of affairs, much more surgery is being done on diabetics. Two other outstanding reasons exist for the increased num-

ber of operations on patients with this disease. One is that there are many more diabetics living to be operated upon, and the other is that the living diabetics, for whom today it is the rule to escape coma, live on and reach the stage of advanced arterial disease which constitutes the main cause of the principal surgical complication of diabetes, gangrene of the lower extremities.

When contemplating operative procedures upon a diabetic, the surgeon must consider two very important factors. These are the anesthetic to be used, and the factor of bacterial infection, as they are related to the production of hyperglycaemia and acidosis and the action of insulin. While formerly we were limited in our choice of anesthetics to chloroform and ether, we now have a fairly large group, including nitrous oxide, ethylene, and the various local anesthetics, from which we may select the one which will provide the greatest safety for the patient.

The dangers of chloroform as an anesthetic are so well known, and its use so infrequent, at least in this country, as to render any extended discussion of its action unnecessary. We may say, however, that of all these anesthetics, it is most likely to bring on diabetic coma, and that its use in these cases is unwarranted. With ether, however, we face a different problem. Despite the discovery and use of many new and valuable anesthetics, for the average surgical patient ether remains the safest and most satisfactory general anesthetic. Let us, then, consider its action in relation to diabetes. Following its administration, there is ordinarily a rapid rise in blood sugar—for example, a rise from 100 mg. to 300 mg. per 100 cc.—with a rapid depletion of stored glycogen after an operation lasting an hour or two, together with a specific poisonous effect on the liver cells rendering them less efficient in storing glycogen. The effect will, of course, vary with the amount of ether used and the severity of the diabetes, but these changes occur whether or not insulin has been administered previous to the operation. In addition, ether is an excellent fat solvent, and its administration causes a rise in blood fat and greatly favors the production of ketone bodies

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*From the Medical and Surgical Services of the Rhode Island Hospital.

resulting from incomplete combustion of fat. Ether, further, interferes with the action of insulin in preventing the accumulation of sugar in the blood by glycolysis, and thus still further favors acidosis. In three distinct ways, then, the diabetic who has had ether has been brought into a condition of impending coma, and must be treated accordingly. We must admit, then, that ether is not the anesthetic of choice for diabetics, despite its general usefulness.

Since its introduction a few years ago, ethylene has been used to a considerable extent in procuring anesthesia for all forms of surgery. Its effects on blood sugar, glycogen and fat are similar to those of ether but somewhat less marked, and to this extent it is preferable as an anesthetic in these cases. We are not convinced, however, that any advantages which it may possess are sufficient to offset its explosibility. If the patient's lungs happen to be exploded, as has occurred only recently in the clinic of a well known exponent of ethylene anesthesia, that, we suppose, must be considered merely the patient's hard luck, and as far as the diabetes, *per se*, is concerned, the anesthesia must be considered successful despite the abrupt and sensational demise of the unfortunate patient.

Nitrous oxide, as administered by a trained anesthetist with oxygen in such a way that asphyxia is never produced, causes a very much less marked rise in blood sugar and depletion of glycogen than either ether or ethylene, and the increase in blood fat is not notable. Here, then, we have the general anesthetic which has the least harmful effect on the diabetes.

As we have seen, all general anesthetics have a distinctly harmful effect on metabolic processes and particularly on those processes involved in the metabolism of carbohydrates. The ideal anesthetic would be one which would abolish sensation without affecting metabolism, and the nearest approach to this available at the present time is gained by the use of some form of local anesthesia. General anesthesia serves to render the central nervous system insensitive to incoming painful stimuli; local anesthesia prevents these stimuli from ever reaching the central nervous system. Of the drugs used to bring about this effect, two only, cocaine and novocaine, need be considered. Cocaine is a powerful local anesthetic of particular value when used by topical application; when injected into the tissues in any considerable amount it becomes

toxic from its action on the central nervous system. Novocaine is less powerful, is of little or no use for topical application, but is only about one-seventh as toxic when injected into tissue. For this reason, it has largely supplanted cocaine as a local anesthetic. Neither of these drugs, in the amounts used to produce anesthesia, has any significant action on metabolism. Here, then, we have the ideal anesthetic for the diabetic patient if it can be made to satisfy our surgical requirements.

There are two chief methods of producing local anesthesia, infiltration and nerve blocking. By infiltration we mean the injection of large quantities of dilute solution directly into the operative site, thus bringing about a direct paralysis of the sensory nerve endings. The method appeals by its simplicity, but it has certain very definite disadvantages. In the first place, the attendant edematization of the tissues of the operative field obscures anatomical landmarks and makes surgery more difficult and less accurate. A second, and, from our present point of view, a much more important objection, is that this infiltration does lower the resistance of the tissues and may thus retard healing or render infection more likely. We believe that this objection, in the non-diabetic patient, is largely theoretical, as neither of these possibilities is of common occurrence. In the diabetic, however, where tissue resistance is already low, we feel that this disadvantage is sufficient to render the use of infiltration inadvisable. Fortunately, in nerve blocking we have a method which entirely avoids any such possibility. In this method, comparatively small amounts of more concentrated solution are injected in the vicinity of the nerve trunks supplying sensation to the operative field, producing what has been called "physiologic section" of the nerve. In this way, by injection at some distance from the site of operation, we obtain what was first described by Cushing as "conduction anesthesia" and what is now generally known as regional anesthesia. Regional anesthesia, then, has no effect on the general metabolism of the patient, and has no effect on the local metabolism of the tissues involved in the operation. It is thus the anesthetic of choice for the diabetic patient.

A detailed discussion of the somewhat complicated technic employed to produce regional anesthesia for all the various operative procedures

which might be required by a diabetic would be entirely out of place in a paper of this scope. From our experience with this method, however, we can confidently state that almost any necessary operation may be performed under this form of anesthesia. The contraindications to its use are the presence of infection at the site of injection or an irrational patient. In these cases, and in any others where imperfection of our technic renders our anesthesia incomplete, the use of nitrous oxide and oxygen is recommended. With these two methods, the surgeon is amply equipped to care for any anesthetic requirement.

When we consider the relation of bacterial infection to diabetes, we are dealing with two vicious circles. A high blood sugar in a diabetic favors infection, and the presence of an infection favors the establishment of a high blood sugar. This is the first of our vicious circles. In a similar manner, the occurrence of acidosis favors the development of infection and the presence of an infection favors the occurrence of acidosis. These two vicious circles, glaring like the eyes of a fell demon at the unhappy diabetic, may prove his undoing—yet usually the spell may be broken by the proper application of surgical measures to the infection and the proper use of insulin and diet—a happy instance of timely co-operation between surgeon and internist. In spite of the foregoing statement, it is a fact that a moderate hyperglycemia with a slight glycosuria does not ordinarily prevent the healing of wounds by first intention. Woodyatt and others have pointed out that it is incomplete fat combustion, i. e., acidosis, which principally interferes with wound healing rather than hyperglycemia. Acidosis, therefore, must be carefully avoided in our postoperative diabetics. It must also be realized that insulin is at a disadvantage in combatting hyperglycemia in the presence of infection, as fever and leucocytosis interfere considerably with its action; as a result, when a focus of infection has been successfully removed the insulin requirement is lowered. These facts serve to emphasize the absolute necessity for intelligent co-operation such as we have previously mentioned.

The operative work of the modern surgeon upon diabetics falls into four main classes, as noted by Bruce and his co-workers at Toronto:

1. Emergencies—e. g., acute appendicitis.
2. Operations of choice—e. g., herniorrhaphies, the majority of pelvic operations, etc.

3. Operations on conditions which result from diabetes—e. g., amputations of the lower extremities, and the surgical treatment of furuncles and carbuncles.

4. Operations designed to improve the diabetes itself. This group consists principally of operations on the gall bladder and bile passages.

Surgical emergencies arising in patients suffering from diabetes demand the same prompt operative treatment as they would if occurring in non-diabetic patients, and no time must be wasted in attempts at medical preparation, although, if time permits, a preliminary blood sugar determination is an aid to the physician in the after treatment. It is in this class of cases that the benefits of modern methods of treatment are most striking. In former years, such operations were among those most to be dreaded by the surgeon, for the outcome was all too frequently coma and death. Now, however, with improved methods of anesthesia, and, more especially, with insulin to make possible better utilization of carbohydrates and thus prevent acidosis, these patients weather such emergencies remarkably well. In this connection, it is of interest to note that acute appendicitis, and at times other acute surgical conditions of the abdomen, may be simulated closely by impending coma. A leucocyte count is not helpful here, as leucocytosis is common in coma. Rigidity of the abdominal muscles is also a common finding in coma. A recent case report in the Cabot series deals with a young girl who was operated upon because of abdominal pain, rigidity of the muscles of the lower abdomen and a leucocytosis of 17,800—all evidences of impending coma, as no surgical lesion was found. Joslin reports a similar case in which he wrongly diagnosed a perforated duodenal ulcer. Such instances are not common, but the possibility of their occurrence must be borne in mind. Of acute appendicitis Dr. Joslin says, "Appendicitis in the diabetic is insidious, almost symptomless, may simulate coma, or coma may simulate it, can be successfully operated upon even though acidosis and peritonitis are present, and the weakness and sweating of a protracted recovery may be due to an insulin reaction rather than to shock or pocketed pus."

In dealing with the second group of operations on diabetics, those in which no emergency exists, medical preparation of the patient is advisable. The routine varies in different clinics, but in prin-

ciple it is essentially the same. The patient should be rendered sugar-free and acid-free in the urine, and his fasting blood sugar should be brought within or near to normal limits by the usual methods. In addition to this, it is customary to give the patients a rather high-carbohydrate low-fat diet for a short time before operation, with enough insulin to keep them sugar free so that they will tend to increase their stored glycogen. Theoretically, a large amount of stored glycogen will decrease the likelihood of postoperative acidosis. Duncan and Frost keep up the high-carbohydrate low-fat diet for three days before the operation. Bruce, Hipwell and Rush placed a number of patients on such a high-carbohydrate regime, with large doses of insulin to insure glycogen storage, but felt that these patients did not do any better clinically than others not so prepared. Their routine procedure is as follows: Render the patient sugar-free and acid-free in the urine and with a normal fasting blood sugar. On the day of the operation, two or three hours before the anesthesia is commenced, give the usual dose of insulin followed by the glucose value of the usual breakfast in the shape of dextrose or orange juice. Following the operation, test the blood sugar and give a dose of insulin, varied according to the findings of the blood sugar test. Glucose may also be given intravenously in normal saline. Do not encourage forcing fluids in the first twelve hours after operation. Within twenty-four hours give the carbohydrate and protein of the usual diet, but keep the fats very low. If nausea and abdominal distress occur, glucose may be given intravenously. Duncan and Frost recommend an extra dose of insulin just before operation, and believe that fluids can usually be forced by mouth within a half hour after operation. They emphasize the value of operating early in the day, so that what they consider the patient's worst critical period, the first six hours after operation, may be passed before nightfall.

Our own routine is much like that described above. We have usually attempted to give orange juice or ginger ale as early as possible after the operation, and have resorted to intravenous glucose only if it has not been possible to get the patient to retain his fluids well by mouth. In addition to the advantages previously enumerated, the absence of vomiting in connection with regional anesthesia makes this method of administering

fluids and carbohydrates very practical and satisfactory in the majority of cases; and the dehydrating effect of long-continued vomiting is also avoided. Glucose may also be given in tap water by rectum. Ordinarily it is a safe thing to administer postoperatively to the average patient approximately ten grams of dextrose every two to four hours, preceded in each instance by ten units of insulin. This is usually continued for 24 to 36 hours. The insulin dosage may be temporarily diminished to five units if the patient is found to have a sugar-free urine or his blood sugar is determined to be low. If administered by mouth, the dextrose is given most easily in the form of ginger ale or orange juice. Orange juice is about ten per cent. sugar, and ginger ale six to ten per cent. It is, of course, obvious that the need for painstaking care is much greater when the diabetes is severe, the operation long and involving important structures, or the anesthetic is ether.

In operations on conditions resulting from the diabetes itself, we have to consider especially the matter of blood supply to the part involved, and to bear in mind the relation of infection to blood sugar and acidosis. In general, when the blood supply of the part appears to be good, surgery should be attempted as it would be without relation to the diabetes, and the efforts of the internist should be directed toward keeping the blood sugar near normal limits and preventing acidosis by the use of insulin. Due to this fact, that common complication of diabetes, gangrene of the lower extremity, can be treated much more conservatively than was possible even ten years ago. A gangrenous appearing infection of the toes in a patient with a high blood sugar but a good pulsation of the dorsalis pedis artery frequently does well under local measures if the blood sugar can be brought down and maintained at a normal or nearly normal level. We have had repeated instances in the last few years of patients with such lesions clearing up completely after incision and drainage, removal of necrotic bone, or local amputation of one or two toes; patients whom we should have formerly considered fit subjects for mid-thigh amputation. If, however, we have a lesion of similar appearance but with clearly impaired blood supply, nothing short of a mid-thigh amputation is likely to be of any value. In doubtful cases, or in cases where healing is extremely delayed, various forms of physiotherapy,

especially ultraviolet light and the exercises recommended by Buerger in thromboangiitis obliterans, may be of value. When amputation does become necessary, regional anesthesia is the method of choice, a method which we have used with complete satisfaction during the past two years in a series of thirty-two amputations, more than half of these being for diabetic gangrene.

Furuncles and carbuncles should be treated in the diabetic in much the same manner as in the ordinary patient, with this exception: in view of the considerations mentioned early in this paper, drainage must be more prompt and more thorough than is customary in order to break up the vicious circle previously mentioned. Exposure of such lesions to x-ray will be found to make possible earlier drainage in many cases by bringing about a coalescence of scattered foci into a single abscess cavity.

Operations designed to improve the diabetes itself are still largely in the experimental stage, but operations on the gall bladder, especially cholecystectomy, may prove to be of real value in improving that type of diabetes which is supposed to result from infection of the pancreas secondary to disease of the bile passages. While there is still much to be learned about this matter, it seems fair to say that the existence of diabetes is an added reason why a person with a diseased gall bladder should undergo operation for its removal. A. H. Gordon and his associates believe that a case recently reported by them, in which the relation between gall bladder disease and diabetes seemed clinically clear, by its postmortem findings tends to throw a doubt on this relationship.

It is, perhaps, of some interest to try to study the immediate results of some of the operative work that has been done on a group of diabetics in this community in an attempt to determine whether or not surgery has, by the methods that have been used, been made reasonably safe for the diabetic. The records of the diabetic clinic at the Rhode Island Hospital have been studied with this in mind. They represent a group of ambulatory patients subject to the same surgical hazards as any other similar group in the community, and their surgical experience is of interest. The diabetic clinic has had in the past four years a total of 326 patients, of whom 234 are now classed as actively attending the clinic. Of these 326 patients, twenty-eight, or less than nine per cent., have

undergone surgical operations, and two of them have been operated upon twice. In these thirty operations, gas-oxygen anesthesia has been used in ten, ether in ten, and novocaine in nine. In one the anesthetic is not recorded.

The following summarizes the facts regarding the operations in tabular form:

Operations	TABLE 1				Totals
	Ether	N ₂ O-O ₂	Anesthesia Novocaine	Unrecorded	
Amputations		9	5	2	16
Mid thigh....	9				
Below knee... 1					
Arm	1				
Toe	2				
Mid foot 1					
Extensive incision and drainage	2	1			3
Appendectomy	1		1	1	3
Extensive gynecological operation	4		2		6
Other operations					5
Ventral hernia	1				
Inguinal hernia	1				
Cholecystectomy ... 1					
Prostatectomy			1		
Exploratory laparotomy for malignancy			1		

There were four deaths in the hospital: two followed mid-thigh amputations, one occurred in the case of perforated appendix, and one in the case of the abdominal carcinoma.

This short record of operations on a small group of patients cannot be considered of any value statistically, and by no means represents the surgery done on all diabetics in the hospital during this period. It does show, however, that diabetics during the past four years have been treated for the surgical conditions which they have presented about as a group of normal people of the same age would be treated, and with results which compare favorably with those in non-diabetics. A few of these patients have died since operation, but from causes that were in no way related to the surgical procedures. The only conclusions that we can draw are that modern medical treatment, especially the use of insulin, has made surgery safe for the diabetic, who can now look forward to a reasonably extended and useful life, in which he can be treated, when surgical emergencies arise, about as the normal person is treated.

The ultimate prognosis in the case of the diabetic facing surgery may be said to be that of his surgery plus that of his diabetes; and only in case of extremely severe diabetes or an extremely serious surgical problem does the one condition materially affect the other.

THE ADVANTAGE OF EARLY MENTAL
DIAGNOSIS AND PSYCHOTHERAPY*

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In this paper I shall make an attempt at demonstrating to the general practitioner the importance of recognizing mental aberrations at an early date, and also the harm that may derive from any temporizing hope that a patient with as yet apparently slight nervous symptoms may soon get over them without any further specialistic interference.

The value of psychotherapy as a complicated medical and scientific operative technique upon the human mind is largely acknowledged among neuropsychiatrists; but the general practitioner has only sporadically chances to appreciate its purport. In cases, however, like that of Dr. Munro of Omaha, a large number of mid-western private practitioners have had opportunities to witness the results of his hypnotherapy in their respective clinical domains to which they called him as a consultant.

Hypnosis, however valuable its circle of indication may be, yet is only one agent in the psychotherapeutical armamentarium. There are other equally important methods, such as psychoanalysis (according and not according to Freud) persuasion according to Dubois, and also a proceeding of personality synthesis, which I have experimented upon and styled "ecto-morphosis," i. e., outforming a morbid, underdeveloped, ill-joined personality.

The wake-suggestive and hypnotic methods are well to use with children and persons of lacking volitional strength; the analytic technique, to reveal pathogenic suppressed emotional thought-complexes; the persuasive technique may be applied in those whose mental bend is ethical and intellectual with a fair vocabulary, i. e., verbal organization, where abstract terms readily evoke concrete images and affects, stimulating the will and urging towards a better adaptive decision. The personality outforming synthesis, or ectomorphosis, should be applied in complicated cases

where the morbid symptoms are an outcome of a dysfunction in the adaptation to an inappropriate environment, and, where hypnotic suggestion would but cover without removing the symptom, and psychoanalysis could only make conscious the conflict without actively remedying the personality strivings for any other future cases of similar nature.

Ectomorphosis necessitates detailed study of the whole personality on physical, physiological, psychological and social levels. In order to reach comparable structure-formulas, I have devised tentative micro-qualitative scales, which consist of ascending values arranged from the negative to the positive pole of a measure system belonging to different aspects of the personality; for instance, the aspect of the insight, the structure of thought-produced affective images, the structure of the course which the pathogenic element took within the patient's psyche, the reaction formula according to which the patient responded to persuasive re-education or rational dialecto-therapy, the structure of his ego-circle allowing an appreciation of values belonging to the instinctual, or else to the sublimated personality-center. I have used microqualitative scales, also, in order to examine into the personality-attitude towards goal-will, impressibility, reality, acceptance of foreign opinion, exchange of life-values and the development of an individual world-view. After the most important personality reactions are stated, and a clinical diagnosis is reached, the influencing method is planned for every single case.

The influencing method in the ectomorph system consists of group-suggestion in special classes with object-lesson-teaching analogy stories adapted by the psychotechnician, and also of individual trend-modifications reached through impressing on the hypnoidized patient such gratifying goal-images which, nevertheless, are in good harmony with environmental requirements. This phantasy-activating and utilizing technique, called phantasiophoresis, I have described elsewhere, for which reason I will forego its comment here, but I should like to mention that it carries with it a deep-engraphic capacity towards forming multiply impressed suggestions, resulting in a marked artificial shift of the dynamo-symbolic personality reactions.

During the treatment, three important curative stages have to be brought about and observed,

*Read in the Pawtucket Medical Society, Pawtucket, R. I., on May 17th, 1928.

namely: first, the stage of insight shift; second, the stage of volitional shift; and third, the stage of mechanical (or habit) shift.

As to prognosis: the greater the speed be in the succession of the afore-mentioned three curative stages, the better; speaking of mental traumatism, the prognosis depends also upon the type of intrapsychic layers particularly afflicted, and, finally, on the length of time during which the psychosis or neurosis was allowed to progress without any therapeutical interference.

Every grave mental or symbolic nervous disorder starts with small symptoms which are barely noticeable excepting to the watchful eye of the trained physician. Even a traumatic neurosis with an apparently sudden onset, or a manic-depressive psychosis with abrupt inception can be traced as being grafted upon a flighty, scatter-minded, superficial, ill-united, or fearful, over-emotional, non-resistant personality.

Thus, if a family physician notices a visibly minor depression, he should think of the future possibility of a grave melancholia capable of developing if not forestalled; or, if he observes a light neurasthenia-like state, this might grow into anything between a general paralysis of the insane and dementia praecox, the degenerative mental dissociation of young age. Many a suicide and many a total mental deterioration could have been prevented, would only the family physicians have had the knowledge of recognizing true morbid potentialities before it was too late!

Usually the psychotic patient is committed to a hospital for the insane when he has gone beyond the stage of still-oscillating insight, that is to say, when he is already firmly anchored upon delusional interpretations of unrealities which, nevertheless, are possessed of a most realistic coloration to his own mind. The neurotic, on the other hand, is left usually with his trouble for a long time, without having been referred to the medical psychologist or neurologist, when he has formed a firm emotional attachment, a deeply inrooted habit to his ailment, and, although he realizes its abnormality, he still does not sincerely crave to rid himself of the same.

Both the insane's lacking judgment and insight, and also the neurotic person's emotive habit-attachment to his own dear morbid syndrome can be comparatively easily tackled by the medical psychotherapist if only they are referred to him

in proper time, that is to say, when the insane is still oscillating between a fearful reality and a wake-dream into which he resorts to flee,—or else, when the neurotic still wonders whether or not it be economically and erotically gratifying to be sick and give up normal competition.

Single physical symptoms, such as certain epileptoid convulsions, nocturnal enuresis, (psychic) vertigo, headache, insomnia, cyclic vomiting and other similar ailments, if properly analyzed, almost always yield a plain mental symbolic cause, or at least a mental etiological factor in the realm of affective thoughts and special image complexes; many conduct-abnormalities, such as children's disobedience, temper tantrums, crying spells, etc., can be reduced etilogically to faulty environmental adaptations and influences. At any rate, there is a conflict within the psyche of the patient, a conflict which may precipitate itself into crystallized reaction within the physical or the higher emotional or the even higher imaginative reasoning and volitional spheres of the human personality. The conflict may occur between the individual's concepts of the environing outer world (W) and his own comfort-craving, conscious gratification-seeking ego (E), or else, between his critical censor, i. e., his sublimated conscience, alias the superego (S), and his ego, or else, finally, between his instinctual impulses felt as foreign occurrences (going on in him without his voluntary effort), alias the id (I), and his ego. From the superego-ego conflict, the conscious guilt-feeling, ideogenous depression, and repressed guilt-feeling appearing as anxiety derives; from the id-ego conflict, obsessions, hallucinations, compulsions and overquantivalent delusional thoughts are produced; and, finally, from the external world-ego conflict, the fright, panic and fear syndromes arise, to speak only of the main ones. Degeneration of the id-sphere results in Schizophrenic affect-lameness; concentric retraction of the main ego-sphere may be considered responsible for twilight states, certain amnesias and narcolepsies.

Now, Dr. Freud of Vienna has attempted to reduce all intra-psychic conflicts to some disturbance in the gratification of sexual libido, but in truth it seems to me that conflicts do arise from disturbance in the attempted gratification of any bodily or mental function which has a typical unit-course, a cycle of excito-tension, acme or climax and a wave-relapse of excito-tension into a

state of quiet or latency. Other such functions outside of the sexual activity are the following: yawning, sneezing, swallowing, voiding rectum or bladder, scratching, etc., these being just as good examples for physiologic functions of a specific phasis-succession with an excito-tension wave of ascent—climax—and descent (or precrisis—orgasm—and satisfaction), as for instance the process of intellectual comprehension, or esthetic contemplation, or reaching a goal effortfully. All these functions have in common their cycloid phasis-succession, and, as the culminating event in all seems to be the motor-spastic climax synchronous with a sensorily gratifying orgasm, I should suggest to designate all these different phasis-succession processes as *orgocycles*.

They all are composed of ten physiological phases: 1, a potential motor pattern, preformed, but as yet at rest; 2, a tension or primitive attention upon a response-evoking stimulus; 3, a scope or quantity of reaction; 4, a penetration or intensity of reaction; 5, an immediate repetition or frequency or contact-rhythm of reaction; 6, a specific climax point or orgasm; 7, relaxation; 8, gratification; 9, organic assimilation of the experience; and finally, 10, radiating stimulation as regards other vital functions. It would be instructive to demonstrate this law for such distant experiences as yawning, or else, climbing on the top of a mountain. Anyone can appreciate that the *orgocycle* will not completely occur even if he should attempt to yawn, provided that all previous conditions are not fulfilled. Or, even if he has climbed the mountain and there remain no reserve mental energy at his disposal to enjoy his reaching the goal, this *orgocycle* will not be completed, and thus will leave a feeling of disturbance, of dissatisfaction.

So far as the craving for power, or else the craving for sexual and erotic gratification is concerned, the two corresponding *orgocycles* are enlarged by additional elements on the æsthetic, logical, ethical and suprapersonally universal level, making up about thirty phases instead of the simple physiological *orgocycles* of ten levels. It is, therefore, evident how much more vulnerable such complicated structure-mechanisms are, in comparison with plainer ones. The interference with *orgocyclic* ego-gratification, occasioning nervous and mental disturbances, do not become immediately prominent in conscious external activity.

Long before the patient exhibits any conduct abnormality, the morbid complex may be haunting in recurrent nightmares and in association tests; later, lack of concentration, distractibility, irritability may set in without any definitely alarming coloration. Then, suspiciousness and seclusiveness may follow, producing finally a frank outburst of volitional and activist aberrations, such as irrational defense reactions of aggression, negativistic resistance or panic flight, and so forth—necessitating confinement in state hospitals or private sanatoria.

Now, the point I wish to emphasize is, that if a family physician notices a recently developed brooding, seclusive or irritable attitude in a patient, he does well by causing a medical psychotherapist to explore the dream-consciousness and subconsciousness of the patient, as adjustments are more hopeful before the morbid stimulus has spread as far as the field of external manifestation through will-functions and actions, than later.

In reviewing the various cases I treated in my Hungarian and American private practice, in the Budapest Medicopsychologic Institute, also different neurological clinics and state hospitals, I am deeply impressed with the difference in psychotherapeutical curability according to the timeliness of correct diagnosis. So far as the state hospital groups are concerned, I recall that in one institution for the insane there existed a period of several months when from among actively psychotherapized patients (belonging to a class of recent onset and early committal with immediate medical interference) at least two patients weekly were rehabilitated; whereas from the chronic groups not more than six were permanently rehabilitated during a whole year. On the other hand, so far as the neurotics are concerned, the great prolongation of necessary intensive treatment in cases tardily recognized by the family physician, seems plausible.

I recall four cases of intellectual mind-pain or psychalgia in Budapest occurring during a suicide epidemic in young students between sixteen and nineteen years of age, which yielded neither to pure hypnoidosis nor mere analysis, but vanished completely indeed after the application of re-educative dialecto-therapy combined with a co-operative activation in students' unions, also by a systematic bio-philosophic development of their personality-ideals, goal-settings and motor-striv-

ings. The results are even now excellent after several years, proving the value of a system made to develop proportionately the emotive, imaginative, reasoning and volitional mind-sphere, and also to co-ordinate all these towards an ultimate high life-goal, stabilizing the personality on a road of calm evolution without revolution. Thus, a mentally well lived-through system of conscious strivings and harmonious adaptations in the most practical sense, a sound bio-philosophy as an ego-adjuster to the environment and as a personality-evolver towards its stable goal has achieved a higher importance in the opinion of the medico-psychologic staff there than it did with staffs of other institutions.

In the protean fluctuation of opinions and ethical valuations of post-revolutionary Central Europe and post-war America, it seems that the inculcation upon youth of a sound bio-philosophic world-view may not only prove to become a mentally hygienic stabilizer, but also a proeminent redeemer from possible psychic illness, arising in unwell joined, scatter-minded personalities, not strongly footing upon reality, and coward to fight out squarely the struggle for life.

My private practice impressed me with the importance of exploring at an early date the sub-conscious dream-mechanisms, because abnormal cravings and fears may appear on the dream-sphere in otherwise normal persons long before these morbid impulses become projected upon the exterior sphere of volitional activity, that is to say, conduct. Now, if an individual is haunted by disturbing dreams, recurring according to the hidden interwoven urge for gratification of personality-cravings, he then may escape a neurosis by successfully contriving some compensatory experience.

A young girl with a recurrent dream about the world's conflagration after the sun has set and touched lightly upon the earth, keeps her balance by absorbing her mind in an intensive routine work.

A middle-aged man, fearing death, dreaming constantly about gallows and the last premortal conscious experience of those to be hanged, compensates emotionally by taking refuge in religion.

A middle-aged lady who has always lived a life of active altruism, discovers that she is neither understood nor appreciated. In a house full of people, she feels infinitely lonesome, seeing no

way to escape from the situation. She has a recurrent dream of walking among old, deserted houses in a blind alley at night; when she asks for a bridge to cross the river, people turn away without any reply, leaving her alone in painful embarrassment. In wake state, she compensates with the biophilosophic solace of doing her duty towards others by spreading sunshine about herself among those who are even worse off than she is.

A young man, temporarily impotent through exhaustive work, dreamed of his panicky flight down the stairs of a burning house, an extremely high building, while a young woman tried to block his passage. No such thing ever occurred to him. He awoke amid anxiety. Next night he dreamed he smoked with great pleasure a cigar through a silver cigar holder shaped like a male sex organ. Next day he had a successful intercourse with his wife, from which event he derived such a compensatory gratification that sexual images suddenly stopped to annoy him during subsequent dreams.

A young married woman, after a period of forced sexual abstinence, dreamed of a chestless and headless naked giant whose male sex organ was being eaten by small greenish babies taking their cannibalistic share in turn, after having issued from the member. At other occasions of undue sexual abstinence, this same young woman has had relatively sleepless periods with considerable dream-talking and subsequent loss of weight. After the condition was recognized, she and her husband were advised to keep a better regulated rhythm in their relations. The disturbance ceased completely.

All these individuals, although perfectly normal on the surface, yet have had their intrapsychic emotional conflicts gone as far as making appearance on their dream-consciousness. Now, had they not contrived fit mental channels for some sort of special gratification, i. e., compensation, then repressions would have supervened and a neurosis would have formed itself through evidencing the abnormal intrapsychic conflict in social conduct.

I do consider compulsion neuroses, hysterias, neurasthenias and psychasthenias as relatively lighter to handle psychotherapeutically, to solve through compensatory mechanisms, than it is the case with degenerative dissociation diseases or

schizophrenias; yet I may say from observation that an early case of starting schizophrenia may be more accessible than a case of psychoneurosis discovered at a late period of the ego's firm anchorage to its cherished illness.

I recall the case of a Hungarian lady whose hysteric astasia-abasia I could stop in ten days by displacing her subconscious hatred towards her husband, her two sons, and towards her own conscious existence through concentrating her urge-to-love on a third child of hers, thus giving her a strong, pleasurable goal-stimulus towards will-efforts to become normal. This case was recognized but several days after the onset.

Recently, in my neurological hospital service, I could arrest within six weeks the cyclic vomiting of an eight years old girl, whose trouble started through fright from a ghost-superstition getting hold of several members of her school class, the event reviving a year old memory of having been scared by a ghost-playing neighbor's boy. The trouble pre-existed but seven weeks before it was recognized.

In the same neurologic service, I could stop a young married man's periodic astasia-abasia, hysterically directed against his wife, after two weeks mental therapy. The trouble pre-existed three weeks only.

There were several severe schizophreniform cases in my state hospital experience, with an apparently acute onset. Different psychotherapeutic measures, like wake-suggestion, hypnoidization, psychoanalysis, dialectic re-education, mental training class treatment with the so-called analogy story object-lessons and discussions, co-operative clubs for insane directed by the psychotechnician, (a lady)—all constituting a personality-outforming synthesis, i. e., ectomorphe—have dissolved their aberrant views, volitional conduct and mechanical habits within a period varying between seven months and one year of intensive work. I recall here the remarkable case of a young man with severe guilt-consciousness believing himself to be the devil or Antichrist, and begging me not to help him until he did not stand naked outside of the hospital, in order to give a chance to God to smite him off the earth. He was hallucinating, worried and disturbed by frightful visions, inaccessible to reasoning until he was allowed to perform his strange test-ceremonial. But before this, upon my request, he agreed to sign a document

according to which he will owe blind obedience to the psychotherapist, provided that God shall choose to leave him alive, in spite of his challenging test. Of course, the patient was unharmed after the test, which experience meant a definitely critical event (an orgasmic climax) in the orgocycle of his psychosis. This brought about a turning point, and the patient recovered completely, although the state hospital staff had preferred a pernicious prognosis. This young man, although naturally always seclusive, started to evidence signs of insanity only a few days before treatment could actually begin.

The family physician is coming into such an intensive contact with fathers, mothers and their offspring, that it behooves him well to influence actively their usually unwise family relations, with as much wisdom as a medical man and professional friend of the race only may. There exist a number of standard situations plague-likely occurring in many modern intellectual families: the on-growing children not feeling any solidarity with their parents because of lacking systematic good example; the lack of remote and proximate worthy goals not well equalled by momentary pleasure-seeking aims; utter egotistic clashes of various members in the same family group, this being much more centrifugal than centripetal; the jealousy among children for the exclusive love of their parents; the unattended pubertal crisis; the later ethical philosophic crisis of irresponsible college youth loving freely, or marrying heedlessly and trying to become independent without sufficient preparedness; the ignorance about mutual sexual and erotic adaptation of young couples; the periclimacteric crisis of mothers who crave to stay young and even compete foolishly with their own daughters; the ongrowing children becoming disgusted with the sexual promiscuity or quarrels of their parents. I could quote interesting examples for all of these items, but to cut a long story short, I may say that in all these cases the family physicians failed to recognize the dangerous nature of the environmental evil bearing a neurosis-forming effect upon some members of the family, although with more theoretical information about the matter they could have sent earlier the respective patients to the specialist, that is to say, not at a late, unpropitious moment.

One case was a compulsion neurosis of a Hungarian young girl, who, from childhood on, re-

quired obedience from her playmates, and during puberty developed wake-dreams about being a superior person, receiving influences from a guardian angel. Later she dreamed about marrying a prince, or a count, or at least a baronet or even an officer of the Royal Army. There came several ones who happened to belong to some other religious communities than the puritanical to which her ancestors confessed themselves. The fond memory of one religious-minded grandfather who was killed by an insane, always caused her to pray for the salvation of his soul. These prayers were pronounced with obsessive reiterations, again and again, in order to make them efficient according to her emotional logics. Now, when she had to choose a husband gratifying her social aspirations, she found one man, who, however, conflicted with her grandfather's puritanical ideals. Here was a conflict. She felt she could not pray any longer for her grandfather's soul, and thus became responsible for his incapacity to enter heaven, or else, to stay there. In order to compensate, she tried to pray repeatedly, but when this was disturbed by contrary thoughts, she tortured herself with a deep guilt-feeling and remorse for causing the loss of her ancestor's soul-salvation. Standing upright, she was compelled to swing to-and-fro a hundred times and more while attempting to pray, but in vain. As a relief from this crushing mind-pain, she flew back into an infantile state, buying about twenty baby dolls all for herself. The compulsive motions, compulsive prayer formulas, became so unbearable that the patient grew violent and thus had to be transferred to a Swiss sanitarium. There she developed a phantasy of not belonging to her family, playing the imaginary role of a princess having been hidden away from her real mother. Her analysis by the Swiss doctors was partly incomplete for their lacking knowledge of the Hungarian language, without which one could not puzzle out her neologisms and verbal condensations—partly it was unsuccessful because of negativism. But much later I could understand her after I received a retrospective account following her return from Switzerland. So far as calming-down was concerned, neither packs, nor baths, nor mental nursing, nor analysis, nor suggestion did help, excepting a young, sympathetic occupational therapist girl who talked to her about philosophic values of life. Then a strong environmental historic influence

occurred: the World War came, which had enough extroverting interest to wake her up and turn her attention away from her dear self towards some higher things and more universal. Later she traveled, fell in love and married an aristocrat, thus gratifying her old innermost cravings of eight years' standing. At the same time she witnessed from very close quarters the downfall of a number of aristocratic crowns and titles, all which woke her up even more. By the time her first child was born, she recovered completely.

The morale is: had her family physician, who knew her from childhood, not temporized before referring her to a neuropsychiatrist, and had he appreciated early enough the type of her psychoneurosis, that young girl's unspeakable torment could have been shortened from three years to perhaps six or three months. Definite mental aberrations went on in this case for at least four years, latently, without being noticed through superficial observation.

As a contrast, with satisfaction can I mention here that five months ago a doctor of Central Falls, R. I., has recognized at a good moment, i. e., early enough, the case of starting mental aberration in a young woman, who had ideas of reference, delusions, of persecution, hallucinations of sight and violent temper tantrums. I was consulted in order to determine the necessity of a committal to the state hospital. After a preliminary analysis and a lengthy conference with the patient and her husband, I was able to change the patient's morbid insight and volitional attitude through suggestion, dialectic reasoning and concentrating her emotions on the normal task of caring for her child. Thus in this case, the family physician, who is a private practitioner, was capable of preventing the actual outbreak of a psychosis.

There is much an intimate medical friend of the family, the family physician, can do for the prevention of frank nervous and mental diseases. By what means? First, acting often as a necessary mediator, through encouraging confidence and co-operation between the centrifugal members of the family; second, through encouraging a well-balanced verbal, emotional and imaginative organization of the on-growing children to insure a proper outlet for sublimating certain instinctual cravings; third, encouraging in them much experimentation with reality, such as physical, chemical and nat-

ural sciences in general will allow; fourth, encouraging agreeable goal-images to be beheld in the quiet state before falling asleep; fifth, through encouraging a co-operative union or intellectual round tables of young people, where through the medium of art-study and philosophy their life-evaluating capacities might evolve and through critical logics their mating instincts may be controlled so as to make unnecessary Judge Lindsey's social mustard plaster called the Companionate Marriage; finally, much can the family doctors do by early influencing their patient's mental balance just about capsizing.

Beside the individual share of the private practitioner, both Europe and America seem to be in need of institutions specializing in morbid personality problems, in nervous and mental disorders of the symbolic and functional varieties, helping the adolescents and adults with their psychalgic tangles, rather than to devote all their time to the childhood's uncrystallized mentality, to which a somewhat undue attention is given in proportion to the ills of grown people. There is a need of such institutions which do research in psycho-therapeutical mechanisms, but without any bias and preconceived dogma—institutions affording also a training field for students of medical psychotechnics. One of such neuropsychopathic clinical corporations charitably devoted to the free treatment of nervous diseases and personality problems in the poor class, to functionate in Woonsocket, Rhode Island, has recently received a charter and will begin its work as soon as it has established its lines of professional co-operation with other medical institutions, according to the Code of Ethics of the American Medical Association.

Let us hope that such institutions, should they be inaugurated also elsewhere by other groups, will meet with the sympathetic understanding of the general practitioner, on whom, in his quality of family physician, so much preventive stabilization does depend.

If he only would create and suggest a firm mental stabilization in and upon his environment through his own personality, representing not only routine materia medica and internal medicine, but also a deep human-friendly biophilosophic wisdom, a wisdom well worthy of imitation and noble emulation!

APPENDIX No. I

PHASIS SUCCESSION OF EMOTIONAL TENSION WAVES WITH AN ORGASM OR CLIMAX POINT

ORGOCYCLES

1. Potential motor pattern, preformed but as yet at rest.
(E. g.: ready reflex apparatus for yawning.)
2. Tension or primitive attention upon a response-evoking stimulus.
(E. g.: excitability of reflex apparatus through fatigue toxins.)
3. A scope or quantity of reaction.
(E. g.: the sum of muscular motions during the act of yawning.)
4. Penetration, or intensity of reaction.
(E. g.: the conscious experience of the affective-reflex quality and energy expenditure.)
5. Immediate repetition or frequency or contact-rhythm of reaction.
(E. g.: small, repeated spasmodic contractions of the pharyngeal musculature.)
6. *Specific climax point or orgasm.*
(E. g.: the last, greatest and most effective spasmodic contraction of the pharyngeal musculature coupled with sudden lachrymal secretion, and often with a general stretching of the body.)
7. Relaxation.
(E. g.: relaxation of all muscles of the body.)
8. Gratification.
(E. g.: the subjective satisfaction, i. e., a sensory tonic experience.)
9. Organic assimilation of the experience.
(E. g.: conscious memory and habit formation with an increased tendency to reproduce the experience at another time in the future.)
10. Radiating stimulation as regards other vital functions.
(E. g.: the successful yawning process increases temporarily cerebral oxygenation and tonicity, especially in the fore-brain cortex.)

Without the described order of phasis succession, the cycle is incomplete.

Affect-tension cycles of sex life and also of general mental efforts have a similar physiological basis, but there are other elements superimposed upon the former, such as the elements belonging to various senses, the æsthetic mental level, the logical, the ethical and the universal-social level.

APPENDIX No. II

The Rôle of an Emotional Psychamboceptor in Analytic Results

Observation material:

1. Fearful animals can be calmed down by a natural vocal cadence intoned by their masters, without any ideational meaning proper.
2. Same thing applies to babies in relation to their mother's familiar tone cadence.

3. Same thing holds true about mentally defective persons.

4. Same thing, in the case of hebephrenics who start to feel familiar if the physician addresses them in a hebephrenic language, rather than in the intelligible logical one; that is to say, he will be better understood by the hebephrenic if he, i. e., the doctor, uses a language similar to the dadaistic style. In such cases I have observed sudden shifts into accessibility and elicitation of connected material from the patient, no matter how paradoxical this sounds. (This may be interpreted either as a product of genuine negativism, or else a result of personal anchorage through confidence arisen towards the familiar-sounding physician.)

5. The same phenomenon is true in the case of buddhists, craving for Nirvana; it is inculcated upon them from early youth on that rebirth is some such contemptible affair as interfering with the ultimately supreme achievement of a superman, i. e., the going-beyond pleasurable and non-pleasurable experiences of psychosomatic metamorphosis. Therefore, it appears a group suggestion, imparted daily with the most natural and familiar vocal tone, that the fading into personal nothingness is the uppermost achievement of the "ego"-appearing "delusion" within the individual. Now, nobody could seriously believe that normal people should draw the deepest emotional gratification from trying to imagine a state of their own utter extinction. Yet, the word Nirvana brings about calming and sublime sentiments.

6. Finally, I have observed that after several analytic sessions with certain psychoneurotics, who eagerly expect the doctor to put his finger upon the pathogenic chief-element of his illness, it is almost the same whatever starting-point the doctor points out and blames, saying to the patient: "*Your trouble is merely this or merely that.*" It is almost indifferent *what* is being blamed, such as complex mechanisms or displacements or symbols, etc., if *only* the resulting *equation* ("*your trouble is this or that*") is voiced with a natural tone carrying the philosophic suggestion (as a by-product) that such ailment and such mechanism is a well-known one, that other patients have got it, and that this particular patient is merely one instance of the general rule, an example thereof. Neurotic symptoms as they appear in the patient's consciousness, if analyzed, show gen-

erally some anxiety because of the handicap the symptom produces, (H), a fear for not knowing the possibly dangerous (ego-dystonic) cause, (F), and anger or rage because not being able to control every mental process going on within their whole individuality, which anger or rage may be substituted by sadness or depression (the hurt master-mind complex), (M). Now, in order to keep the morbid symptom (S) above the threshold of consciousness (C), the presence of H plus F plus M is indispensable. But if the F is fooled and the M emotionally gratified by the almost arbitrary emotional psychamboceptor ("*This, although it seems terrible, yet is merely that, and therefore deserves ridicule or no attention rather than excitement*"), then the primordial H component of *morbidly-awareness* will disappear through the emotional indifference of the patient towards his morbid symptom which did disturb him in his reflective consciousness.

APPENDIX No. III

Concerning the Orgocycle of Guilt-Consciousness

In many persons it was observed that after the compulsion to commit a crime, and after the crime was actually performed, a new compulsion arose in them urging their ego towards confession of guilt. It also was observed that such persons derive a greater gratification from being sentenced than from an easy escape. In reality, in such well-differentiated individualities, the getting-rid of a painful (psychalgic) guilt-consciousness is more intensively craved-for than the physical security or purely mechanical freedom of the person. Such egos can be ridded from the crushing guilt-consciousness only through a very definite act of painful atonement, this being the orgasm or culmination point in a corresponding orgocycle.

A similar mechanism is known to exist in some conscious and unconscious guilt-psychosis with a conscious or unconscious self-punishing tendency. The attempt at atonement is represented by the morbid symptom of hysteric anesthesia or paralysis or any other pathological sign; consequently, in my opinion, the extricating psychotherapeusis should bring about another equally definite mental experience, deeply impressing upon the patient the advent of a new era in his existence. Such definite mental experience acting as an orgocyclic acme-point, can be brought about by bio-philoso-

phic dialectic persuasion combined with hypnoideal phantasiophoresis. In my practice, I have noted several marked results with psychotic and neurotic individuals. (See, e. g., the case of Mr. F. L., afflicted with psychalgia over his devil-delusion.)

APPENDIX No. IV

On the Role of a Mental Katalyser, the Energo-Centrid, and Its Special Form, the Penetrimago

I have noticed in serial experiments made on intellectual young persons that certain individual ideas with concrete imaginable contents, made artificially to recur at certain short periods, say every second day, or preferably every evening before falling asleep, have tended to stimulate ethical ambition and ideo-motor activity.

Such ideas bring about a series of mental experiences, which can be analyzed introspectively.

First Phasis: the specific idea is abstractly voluntarily recalled (i. e., ekphorated).

Second Phasis: the associated image reproduces itself.

Third Phasis: the associated emotion reproduces itself.

Fourth Phasis: the experience of a release of intrapsychic energies reveals itself (Dynamophoric Experience).

Fifth Phasis: a euphoric affect arises.

Sixth Phasis: a cluster of thoughts and images unfolds itself.

Seventh Phasis: the ego-will-control of directing the above-mentioned thought-image cluster (series) becomes evident to the person.

Such starting central ideas I suggest to designate by the descriptive term "energo-centrid."

Energo-centrids can be favorably incorporated into orgocyclic mechanisms for either psychotherapeutical purposes, or else for evolving or stabilizing integral personality traits.

The therapeutical procedure of choice is artificial phantasiophoresis, or dream-grafting, which can be preferably performed under hypnoidosis.

Energo-centrids may assume such intensity within a psyche that they may penetrate (among certain conditions) from one state of awareness into another, for instance, from subconsciously reiterated cravings into day-consciousness, or else from day-consciousness into dream-contents. Such

energo-centrids having a transconscious, penetrating, image-like quality might be designated as penetrimagos.

Example for an intro-active penetrimago: a person dreaming of being in acute life-danger, suddenly finds it occurs to him that all this is only a dream, and, without awakening, continues to sleep until the next morning.

Example for an extro-active penetrimago: a woman, who for a high forceps operation had to be anesthetised, awakening gradually from the effects of ether, screams out, inquiring for the health of her assumedly just born baby at a time when her sensorium is still confusionally clouded.

GYNECOLOGY FOR NURSES

By H. S. Crossen, M.D., 281 pages, 365 illustrations. C. V. Mosby Co., Publishers, St. Louis. Price \$2.75.

The book is admirably arranged to accomplish its ultimate purpose, i. e., to give the nurse a knowledge of gynecology whereby she may assist the surgeon and care for patients intelligently and with the added interest and effectiveness that comes with such knowledge.

The subject is introduced with a brief review of the anatomy and physiology and of the general methods and purposes of gynecological diagnosis and treatment. A simple direct expression is used which is further clarified by numerous and rather remarkable photographs, microphotographs and charts, which in themselves if carefully studied would give a comprehensive idea of the subject. Physiological and pathological conditions are carefully differentiated. Explanations include the use of popular as well as technical phrases and include many hints which should prove a help to the nurse in intelligently advising the numerous individuals who come to her informally, thus helping avert many of the more serious conditions which may be prevented by a timely visit to a physician.

The second part of the book is devoted to the details of gynecological nursing, including the minute procedures of technique used in preparations, examinations and operations. As in the first part, the admirably arranged and clearly defined illustrations contribute much in explanations where words are inadequate.

The paper, printing, and especially the illustrations make the volume an exceedingly attractive text-book for the nurse who would specialize in gynecology, and as a reference book for students the volume would seem indispensable.

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EDITORIALS

ON THE TRACK

Cancer studies have been carried on both in this country and abroad for a long time. Recently the studies have become amazingly intense and represent an enormous amount, economically, in labor and money. Workers seem agreed the quickest way to conquer the disease is to methodically learn and tabulate all facts about cancer that is possible for them to know. No detail, however insignificant it may appear, can be overlooked and a great deal more work must yet be done.

The process of first understanding the disease is beginning to bear fruit by showing improvement in the treatment and will continue to do so probably more rapidly than in the past.

Thus far research work on cancer has been carried on in different parts of the country, in different institutions, and by different men quite independently of each other. Naturally, much work has been needlessly duplicated with a loss of the labor and money.

It would seem as if a Central board composed of the foremost cancer students might act in some advisory capacity and also as a clearing house for

work that has been done. The board could suggest the type of work that is necessary without in any way regulating the methods of doing it and the board could also advise and even direct the appropriation of funds to various units most in need. As a result of such a supervising organization research progress in the cancer problem would be faster and cheaper.

ANNOUNCEMENT

THE WOONSOCKET NEUROPSYPATHIC CLINIC

STATE OF RHODE ISLAND AND PROVIDENCE
PLANTATIONS

Duplicate Articles of Association
(Non-business Corporation)

KNOW ALL MEN by these presents, that we, Mrs. Marguerite de Nevers Ujhely, Valentine Ujhely, M.D.; Joseph Myre, M.D.; Charles Boucher, M.D.; and Henry Blais, Jr., all of lawful age, hereby agree to and with each other:

First. To associate ourselves together with the intention of forming a corporation under and by virtue of the powers conferred by Article III of Chapter 248 of the General Laws of Rhode Island.

Second. Said corporation will be known by the name of Woonsocket Neuropsychopathic Clinic for Nervous Diseases and Personality Problems.

Third. Said corporation is constituted for the purpose of (a) maintaining a free clinic for the advice and treatment of nervous and mental disorders, especially of the functional and symbolic varieties; (b) scientific research in psychotherapeutical mechanisms; (c) affording a training field for students of medical psychotechnics. It restricts its functions to the poor.

Fourth. Said corporation shall be located in Woonsocket, R. I. (Further provisions not inconsistent with law.)

Fifth. Its governing organization shall be the Board of Directors, consisting of those charter members (i. e., incorporators) who are gratuitously offering financial values such as premises,

supplies, neuropsychiatric work, teaching medical psychotechnics, and social service. No other persons hereunder signed shall be personally responsible for any active work done. The Board of Directors shall consist of the Director of Premises, the Neuropsychiatrist in Charge, the Psychotechnician, the Social Service Assistant.

Sixth. The Board of Directors shall appoint only such officers who engage themselves upon their word of honor to do their work for at least one year, unless there be a good reason for their release from duties. This corporation, being a charitable organization, engages only voluntary non-salaried officers, and has no membership fees. Donations have to be acknowledged publicly by the Board of Directors.

Seventh. A yearly report shall be submitted to the Secretary of the State of Rhode Island, the R. I. State Medical Association, the Woonsocket City Health Department and the American Medical Association. Co-operation with other medical institutions shall be kept, and the Code of Ethics of the American Medical Association shall be followed.

May 10, 1928.

Officers elected on May 11, 1928: Mr. Edouard de Nevers, Director of Premises; V. Ujhely, M.D., Neuropsychiatrist; Mrs. Marguerite de Nevers Ujhely, Psychotechnician; and Miss Helen Arpin, Social Service Assistant.

Location of the Clinic: 34 South Main Street, Woonsocket, R. I.

BOOK REVIEW

STRABIMUS, ITS ETIOLOGY AND TREATMENT, By Oscar Wilkinson, M.D., The C. V. Mosby Co., Publishers, 1927.

This work is largely composed of quotations from previous writers, and, as a matter of course, contains much valuable material. The author has added very little to this. The chapter on etiology summarizes, and to some extent harmonizes, the three chief theories as to the cause of squint. The author then adds a fourth, "nervous" theory, an indefinite thing, which seems to detract from, rather than assist in, a clear understanding of the subject. Non-operative and operative treatment are well presented. The book adds little to our previous knowledge of squint, but does serve a useful purpose in presenting in one volume the opinions of numerous well-known authorities.



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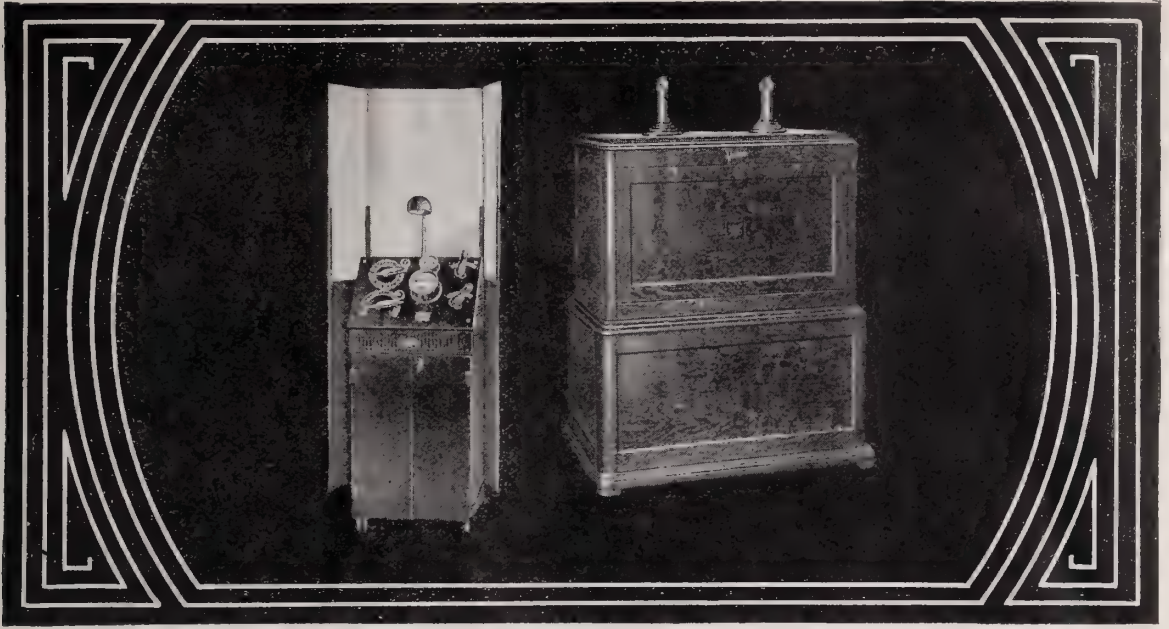


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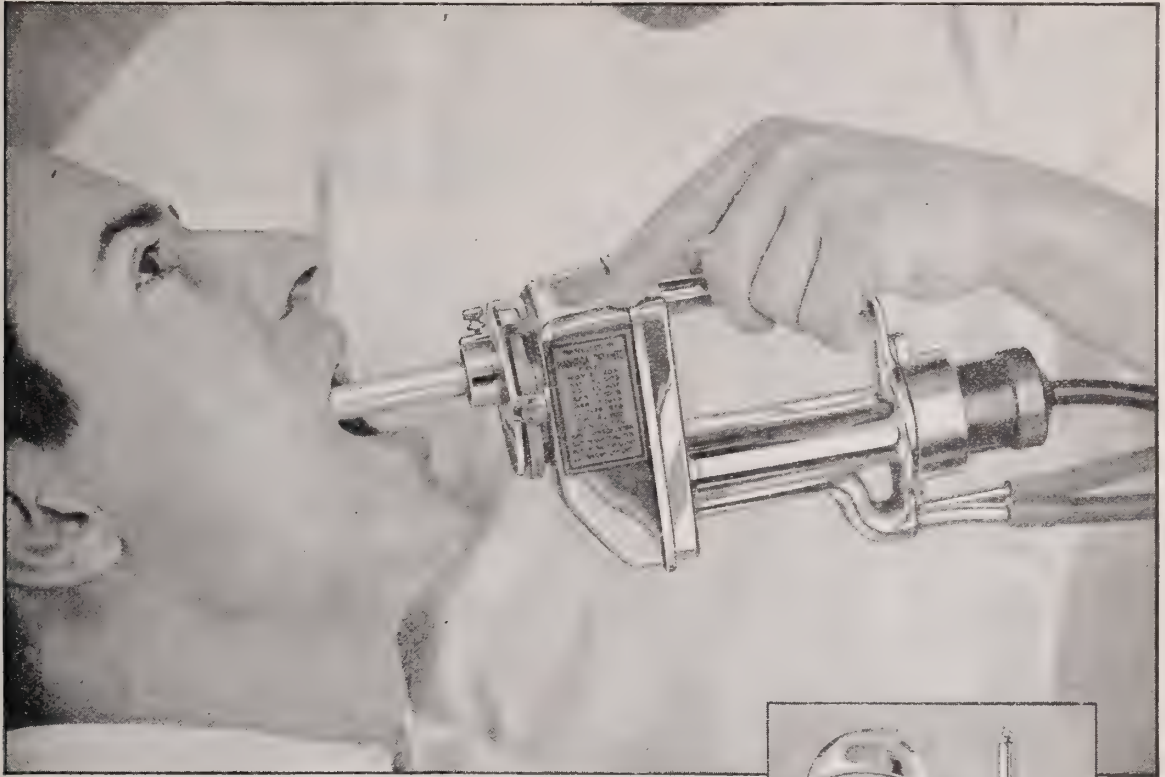
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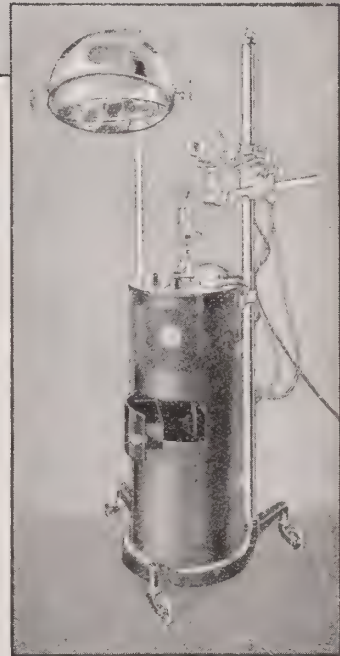
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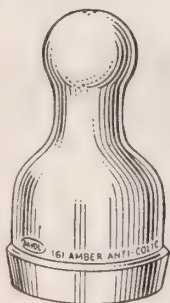


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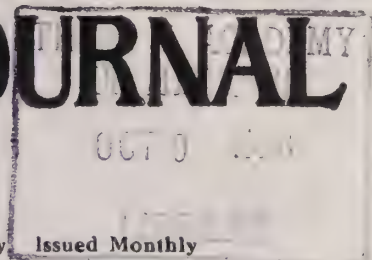
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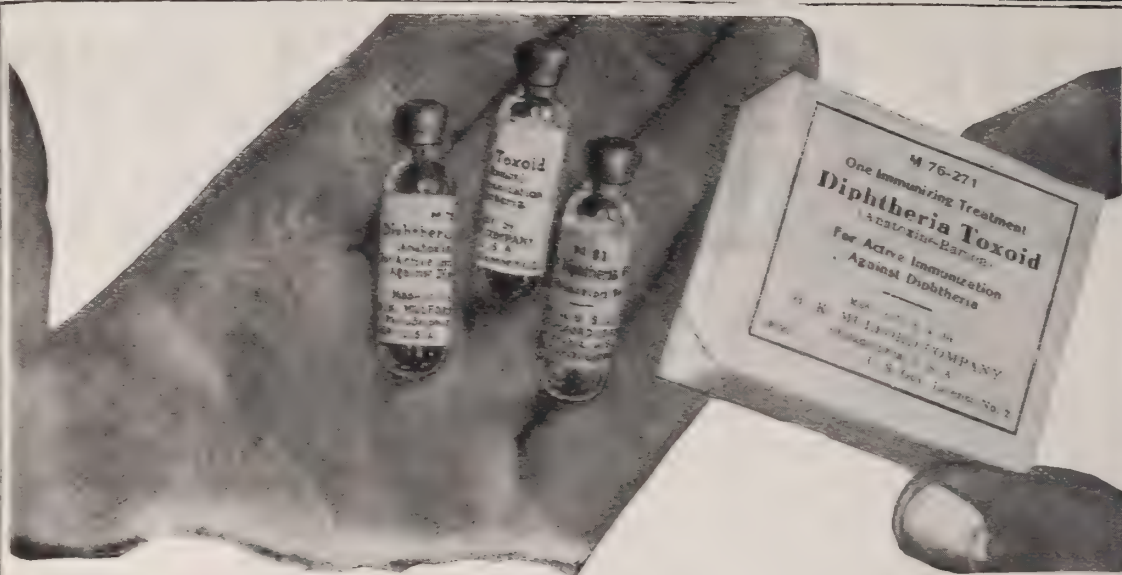
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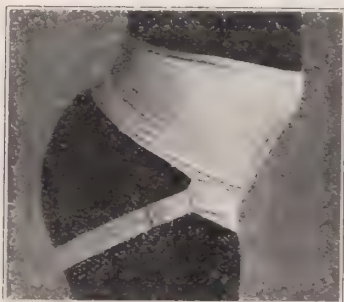
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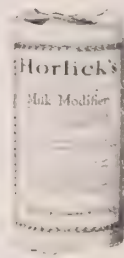
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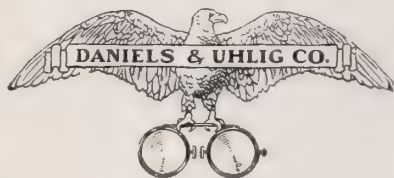
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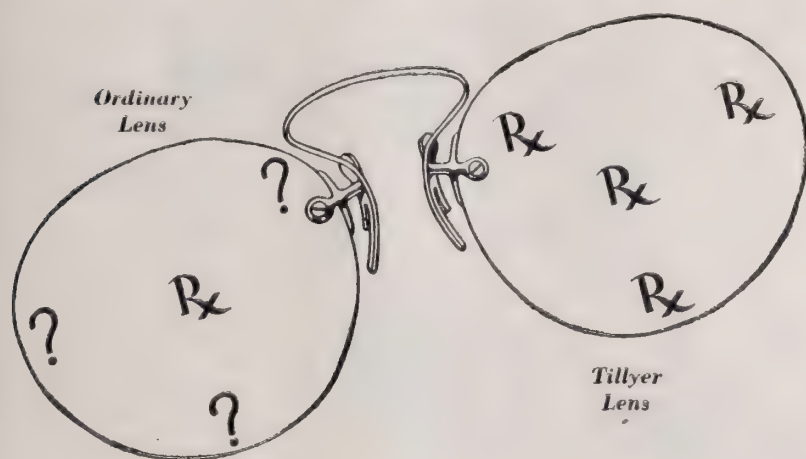
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ORIGINAL ARTICLES

PRESIDENTIAL ADDRESS*

By DR. NORMAN M. MACLEOD

NEWPORT, R. I.

The annual address of the President of the Rhode Island Medical Society should contain information concerning medical affairs in the state, constructive criticism in the correction of defects, and stimulation in the furtherance of the ideals of the medical profession.

INFORMATION: There are certain needs that I wish to bring before the Society. We should have available to the members of the Society a roster of all the members. At present, the card catalogue is the only available source of information. One of our sister societies of New England prints an annual list in connection with its journal, and this would seem to be a practicable method for our Society.

Group insurance is a matter that is being investigated by a committee of the Society. Whether this is desirable is open to question, but it should be given definite consideration. There are examples of methods carried out in several states that will be helpful to the committee.

Another committee of the Society has been appointed to determine the needs for a new building, and also to consider possible locations. Our inanimate population has grown so rapidly that it takes the present available space. It is quite important that our books, which are a real asset to the Society, be given some consideration. Our present location allows of expansion in only one direction. Whether another story added to the present building would give us a room that would be quieter than our present auditorium is a question. Another phase of this problem, and one that is important, is that of parking. In order to attend meetings, our members must be transported, and the parking problem is one that will not grow less in future years.

*Read before the Rhode Island Medical Society June 7th, 1928.

Our legislative committee has been on the watch during the year, and the new legislation has been mostly of a progressive nature. The chiropractic bill, which contained many objectionable features as first presented, was so changed that it gave but little advantage to the chiropractors. It has been the intention of the committee and has been the policy of the officers of the Society to co-operate as far as possible with all health agencies interested in legislation, and it is gratifying to be able to state that there has been the finest co-operation during the year.

Another committee of the Society that has been doing good work is the Committee on Education. Education is one of the duties of our Society, and as in the charter of the Society we are termed a Medical Society, "based on liberal principles," we should always be a leader in educating the public. The short talks that have been kindly broadcast by the station of the Outlet Company are a proper means of bringing to the public the best in preventive and curative methods. It would seem desirable that the Society extend its usefulness by recounting in some form the great achievements of modern medicine, either in the form of Healthgrams that are used by some organizations, or by the methods employed successfully by the Toledo physicians.

CONSTRUCTIVE CRITICISM: In my visits to the component societies, the question of programs seemed to be one of the important problems. It is difficult to have any definite policy in regard to programs in small societies, but it does seem desirable to make some attempt. In the programs presented to the Society during the past year, the aim has been to find something that will interest different groups of men. For instance, the papers have embraced public health, contagious diseases, internal medicine, surgery, ophthalmology, endocrines, pediatrics, anatomy, orthopedics and military medicine.

The attendance at medical meetings is always a problem, and will remain so in both large and small societies. The problem seems to be one of interesting the young man in medicine. How many faithful attendants there are of medical

societies in the county, state and nation who are beyond the sixty year mark? Without them we would make a sorry showing, but the future of the Society is in those in the third and fourth decade. Some means must be found to reach these men, and a regular all-round program may be one of the means.

Medical ethics is a question that is difficult to introduce into meetings, but it is a vital need in our profession. This subject was discussed at two of the county society meetings, and it seemed to be the consensus of opinion that we in the medical profession had a double standard of ethics, one for the general practitioner, and another for the specialist. Of course, this is not true, but it is true that many of the profession who claim to be specialists have, by their questionable conduct, hurt the reputations and standing of the real specialists. There is room for specialism in medicine, and the real progress of medicine started with the development of specialties. It behooves us all, general practitioners and specialists, to see to it that we are not responsible for the lowering of the standard of medical ethics. One layman, John St. Loe Strachey, has faith in the profession, as shown by the following statement: "I say, without the slightest fear that I may be overstating my case, that there is no profession which is more exposed to the temptation to forget honor, humanity and kindness than the medical profession, and none in which the exploitation of human suffering is easier. Yet there is none in which the temptation is so triumphantly withstood."

Finally, what can be said to give stimulation to those who find little of idealism in the medical profession. The two factors that seem to lead to pessimism are the development of community medicine and the menace of the cults. First as to the cults: Cults have always been in existence and will continue as long as human credulity is as it is. As one man has stated, "There are three things which almost every person gives himself credit for understanding whether he has taken any pains to make himself master of them or not. These are, 1, the art of mending a dull fire; 2, politics; 3, physic." How many times have we listened to a patient confessing that they had tried certain remedies suggested by friends or relatives. To descend to the level of the adherents of some of these cults would be a

death blow to our ideals. Time is the regulator that will help to chase away our pessimism. In one of the cults—chiropractic—the founder and fountain head, B. J. Palmer, sees the handwriting on the wall. His school at Davenport, Iowa, which at one time had 3,500 students has now but 300. In an address at Philadelphia on February 26, 1928, he spoke as follows: "Fully eighty per cent. of the chiropractors in Pennsylvania are practicing medicine, not chiropractic. My ideals concerning chiropractic are shattered. Chiropractic is doomed. You have drifted so far from the basic principles of chiropractic that you have lost your identity and brought the basic science bill upon your heads. You cannot defeat the ends of science. Twenty-eight chiropractic schools have closed recently, and many others will follow." Real medical science will proceed to the end of time in spite of cults past, present, and those to come.

Community medicine means to many physicians that the public is usurping the functions of the profession in educating and caring for the people. There are some persons and some agencies that are too enthusiastic, and would welcome the advent of real state medicine, but the rank and file of the public still have faith in the profession. Real progress is the result of individual investigation, and state medicine would tend to lessen individual activity.

The community needs the physician in furthering the ideals of preventive medicine, and surely the profession needs the public. There must be co-operation. Heywood Brown, the columnist, has this to say about medicine: "In the long run, the heretics or reformers, call them what you will, return to the hospitable arms of Mother Medicine. Sometimes the vast majority of organized practitioners seem set and sealed against well demonstrated innovation, but in the long run truth will prevail." If we, in our generation, can leave the practice of medicine a little better, we will not have lived in vain. We should always realize that ours is a real profession, and we can say that Descartes, the French philosopher, was right when in the seventeenth century he said: "If ever the human race is raised to its highest practical level, intellectually, morally and physically, the science of medicine will perform that service."

PHASES OF THE ETIOLOGY AND TREATMENT OF ABSCESS OF THE LUNG*

By FRANK B. BERRY, M.D.

From the Tuberculosis and First Surgical (Columbia)
Divisions

BELLEVUE HOSPITAL

(Clinics of Drs. J. A. Miller and A. V. S. Lambert)

LUNG ABSCESS

In any consideration of abscess of the lung the terminology should be so defined that a clear understanding may be had of this condition. According to our conception of the disease the diagnosis of lung abscess should be limited to that group of cases in which one or more true abscesses are present in the parenchyma of the lung. The pathology of such an abscess is definite. The walls consist of collapsed alveoli and bronchioles with the lung tissue itself infiltrated with polymorphonuclear leucocytes, while still further peripheral is a greater or lesser zone of soggy oedema and pneumonitis. Eventually the centre of the abscess begins to break down and is then coughed up as a bronchial communication becomes established. When healing commences the surrounding oedema and pneumonitis first subside and a typical circumscribed abscess with a soft and liquefying centre remains. With still further repair the inflammatory exudate in the abscess wall disappears, necrosis and sloughing cease, the surrounding alveoli are gradually re-aerated and then reexpand, and finally only a small fibrous scar remains.

In gangrene of the lung the picture differs. Again, where the infection occurs primarily in the bronchial tree there are both a different pathology and clinical course. In bronchiectasis many bronchiectatic or bronchiolectatic abscesses may be present and these are often loosely considered as lung abscesses. With them, however, we have no concern and such instances have been carefully excluded from the groups here considered. On the other hand, bronchiectasis is sometimes secondary to the imperfect healing of what was originally a true abscess of the lung parenchyma. These cases have been included.

Two other types of abscess may be mentioned in passing, neither of which, however, presents the characteristic pathology nor the clinical syndrome of primary acute abscess of the lung. The first of these is the pyemic abscess, always multiple, seen in the frank bacteremias. The second is the small subpleural abscess so frequently associated with influenza and streptococcus pneumonia followed by empyema.

As to the mode of production of a lung abscess considerable difference of opinion prevails. One school of workers thinks it is always embolic in origin. Experimentally Cutler and his associates have repeatedly produced the characteristic lesion in dogs by injecting an embolus into the jugular vein. These experiments were well conceived and the method is ingenious. The embolus was very large, however, and contained two distinct foreign bodies as well as a heterogeneous collection of infective material. Lambert and Weeks, working with blood clots infected with pure anaerobes and using a similar technique are at present proceeding along this line in New York. Furthermore, clinically these abscesses frequently appear between the first and third weeks in a postoperative convalescence, which without other recognized pulmonary complications is exactly the time when emboli are prone to occur.

On the other side are those who believe that abscess of the lung is due to aspiration of infective material. Smith, of Raybrook, has written extensively on the subject and with brilliant experimental work has shown beyond question that an abscess may be produced by aspiration. Still more recently Allen and Crowe, each using quite different methods, have further demonstrated this. It seems most probable, therefore, that an abscess of the lung may be produced either by the lodgment of a septic embolus or by aspiration, or by a bland embolus plus infection in the upper air passages.

SEX

It has been found that lung abscess is about three times as common in males as in females. Our own series bear this out. In the first there were 45 males and 15 females; in the second 31 males and 9 females; and in the third 19 males and 7 females. This gives a total of 95 males and 31 females.

*Read before the Providence Medical Association, May 7th, 1928.

ETIOLOGY

In going over these cases it was striking to note in how many instances no definite etiological facts could be found. In other words abscess of the lung does not necessarily follow pneumonia or some other respiratory condition but very frequently exists as an abscess from the start. In our first group of cases 22 out of 60 were idiopathic; in the next group of 40, 14 were idiopathic; and in our last group 12 out of 26 were of this type. In other words 48 out of 126, or 38% of our entire series, were spontaneous in origin. Of the total 126 cases 16 (12.7%) followed tonsillectomy; 17 (13.5%) followed other surgical procedures; 33 (26.2%) followed pneumonia or other chest conditions; 3 followed tooth extraction; 3 followed immersion; 1 followed foreign body inhalation; 2 followed trauma to chest; 1 followed trauma elsewhere; and 2 were associated with long history of cough and hemoptysis.

BACTERIOLOGY

Our bacteriologic studies have been so far decidedly fragmentary and limited to cultures taken at operation. Until recently we have not cultured the sputum. In the cases in which cultures were made anaerobic bacteria, fusiform bacilli, spirilla and spirochaetes, and sometimes large streptococci were uniformly present. These were usually the only organisms to grow, although occasionally an ordinary aerobic staphylococcus or streptococcus was also found. During the last two or three years a good deal has been written about spirochaetosis of the lungs. The organisms referred to are the same varieties found so frequently or uniformly in lung abscess. Rarely they may even be found in the blood stream. Whether or not they are of true primary pathogenic importance or are secondary to one of the ordinary pyogenic organisms is as yet undetermined although there is increasingly strong evidence in favor of the first hypothesis.

DURATION OF SYMPTOMS

The duration of symptoms before coming under observation we consider most important from the standpoint of treatment and prognosis. In 48 patients the symptoms were of less than 1 month

duration. Forty-three patients had had symptoms for 1-3 months; 14 from 3-6 months; and 21 for over 6 months. We believe the prognosis is best if treatment is started early, certainly not later than three months after onset.

Our results have justified this belief and are as follows, (this table based on 86 cases).

TABLE I

Under 1 Month (33)			1-3 Months (33)		
Cured	23	(70%)	Cured	11	(33.3%)
Died	6	(18%)	Died	13	(39.3%)
3-6 Months (8)			Over 6 Months (12)		
Cured	2	(25%)	Cured	5	(41.7%)
Died	3	(37.5%)	Died	4	(33.3%)

A few patients were classed as improved. They are those whose abscesses were chronic and whose symptoms were ameliorated only while they were under some form of treatment. We believe that under activity or strain such as abscess usually becomes active again.

SYMPTOMS

A wide variety of symptoms may be present. The most important triad, occurring in about 70-75% of the patients, is pain in the chest, cough and sputum. Other, though less frequent symptoms, were chills and fever, hemoptysis, foul breath, dyspnea, loss of strength, and hoarseness.

SIGNS

Abscess of the lung, in spite of its extensive pathology and pronounced X-ray findings often gives surprisingly few physical signs. The most constant of these are first, dullness, and second, fine rales. Even the most extensive lesions may give only slight impairment of resonance and it is astonishing to note how relatively infrequently changes can be noted in breath or voice sounds or fremitus. Furthermore such variations as these may be are quite inconstant—with the signs sometimes increased, sometimes diminished, or both. There are rarely signs of actual cavitation. Clubbing of the fingers and toes is a frequent accompanying manifestation and may occur as early even as the first month.

LOCATION OF LESIONS

In 89 cases the lesion occurred on the right, and in 35 cases on the left side. In 2 instances

the lesion was bilateral and multiple abscesses were noted six times.

In 51 cases of our series the upper lobes were involved, and in 67 the lower lobes were affected. The right middle lobe was the site of the lesion in 7 instances.

TREATMENT

Treatment may proceed along one of four main courses or with combinations of them. These are first, expectant treatment with postural drainage and rest; second, bronchoscopic; third, pneumothorax; and fourth, surgery. At first we established surgical drainage as soon as the diagnosis of abscess was made. This was accompanied by a terrific mortality (71%) and it soon became evident that some other plan would have to be sought. Since then our regimen has been quite the opposite. We have not confined ourselves to any one method of treatment but have done what would seem to us at the time most likely to give the best result in the case at hand.

The two most important guides are the changing picture as seen in X-ray films taken usually at weekly intervals and frequent staff conferences on each individual case.

The patient is at first put upon absolute bed rest and postural drainage three or four times a day. This usually consists of the patient hanging with his head and trunk over the side of the bed and twisted so as to bring the bronchial communication at the most dependent portion of the abscess. If this is not effective some other position is sought that will facilitate drainage. This position is maintained for from five to twenty minutes at a time until the cavity is well drained out. Patients are almost immediately conscious of their increased comfort and of long periods of freedom from cough and soon learn for themselves the appropriate time interval between treatments. This postural drainage alone was employed in 59 cases. Of these, 33 (55.9%) were cured, and 10 were improved.

THE BRONCHOSCOPE

If for any reason progress is not satisfactory the patient is referred to bronchoscopic examination and suction. We have felt that bronchoscopy, although of tremendous aid and value in accurate localization and sometimes in the treat-

ment of an abscess, is yet not entirely devoid of danger even in the most expert hands. It must always be regarded as a major procedure and should be performed only by skilled operators. By its paroxysms of coughing may be induced, which, in turn, may bring about the rupture of the protecting adhesions of a cortical abscess, and an ensuing most virulent and fulminating pyopneumothorax.

Inasmuch as somewhat over half of the cases of lung abscess can be cured by the simple regime of postural drainage alone it has seemed to us wiser to hold the bronchoscope rather in the reserve than in the front line of treatment. Furthermore its most brilliant results are obtained in the centrally located abscesses, which usually respond readily to simple postural treatment.

PNEUMOTHORAX

We have had only a limited experience with artificial pneumothorax as a primary treatment of lung abscess. In our opinion it is a form of therapy that must be used with extreme caution and only in properly selected cases. It is accompanied by two very real sources of danger; 1—rupture of a cortical abscess into the free pleural cavity due to tearing of adhesions, and, 2—the shutting off of drainage. Both of these sequelae have been seen in our clinic. In certain centrally located abscesses, however, it may be of great benefit, for here there is no danger of rupture, and if carefully administered, drainage may be facilitated and more rapid healing promoted.

SALVARSAN

Whether or not the use of salvarsan intravenously, where the Wasserman is negative, is of any real value, we are unable to say. Certainly it must be used early in the disease if any benefit is to be expected, but such cases show a high percentage of recoveries anyway. It will sometimes unquestionably cause a disappearance of odor from the sputum but beyond that we feel it is of very limited value.

FOCI OF INFECTION

If other foci of infection are present such as infected sinuses or teeth, these should be adequately treated, otherwise they may act as a

constant source of re-infection for the abscess in the lung. This has been well demonstrated recently by Crowe experimentally and others have made similar observations clinically. Of our last 40 cases 10 were noted to have had bad teeth, in 3 the teeth were only fair, in 6 they were in good condition, and in 21 no mention of them was made. This we feel is of real importance as the teeth and sinuses should be carefully considered.

SURGERY

In a certain number of instances after six to twelve weeks of careful conservative treatment the abscess becomes stationary as shown in the roentgenograms. The surrounding pneumonitis has disappeared and now only the abscess itself with its fibrous wall is seen in the films and fails to improve further. Under continued conservative treatment the patient may maintain a subjective improvement, but his abscess still remains and under strain of any sort may recrudesce with the reappearance of acute symptoms and spread of lung involvement. If this does not happen the abscess becomes chronic with organized fibrous walls incapable of reaeration and re-expansion. The optimum time for surgical drainage is just before this last development supervenes when such an abscess has reached the limit of its progress under the various conservative forms of treatment and before its wall has begun to organize. It is now a purely local lesion with the surrounding lung healthy. Nothing further is to be gained by delay and the surgical risks increase just as up to now they have diminished. If the abscess is cortical the chances are that protective adhesions have already formed thus facilitating the surgical approach. In cases of chronic lung suppuration the risk of cerebral involvement, either by abscess or embolus, is estimated to be about 12%. The risk of hemorrhage, operative or post-operative, likewise increases due to the tough chronic inflammatory tissue, which tends to keep the vessels open rather than collapsing promptly about them. For the same reason the chronic abscess cavity tends to persist as the walls are then incapable of reaeration. This results in a permanent bronchial fistula communicating with a chronic cavity of greater or lesser

size, and if the fistula closes a fresh abscess ensues. In any event a surrounding bronchiectasis is liable to develop. In short if operation is too long delayed in this group of cases the mortality increases to approach even that where surgical drainage is established in the early acute stages of the disease.

TABLE II

Series	No. of cases	No. operated upon	% cases operated	Cured	Improved	Died	Operative mortality
First	29	14	48.3	4	0	10	71.5
Second ...	31	13	41.9	7	1	5	38.5
Third	40	20	50.0	9	7	4	20.0
Fourth ...	26	6	23.1	2	0	4	66.6

From the above table our increasing conservatism is at once apparent. Of our last 26 cases less than a quarter came to operation. Hence these six patients were those in whom all other forms of treatment had failed and were of the most difficult sort. An analysis of their deaths is interesting and is typical of the deaths seen in chronic lung suppuration. The first patient died following his fifth Graham cautery operation for bronchiectasis. He had been operated upon for his abscess successfully ten months previously and made a good recovery. Symptoms reappeared and an extensive bronchiectasis was found from which he eventually died.

The second died of a pneumonia of the opposite lung in his post-operative convalescence.

The third died of cerebral embolus following operation.

The fourth had an abscess at the hilus of the middle lobe communicating with a large bronchus. Following operation she seemed unable to aerate her lungs sufficiently and died on the third day.

Our cases are grouped into four series. In the first surgery was resorted to as soon as the diagnosis was made. In the later series a conservative regimen of treatment has been followed throughout.

The following table shows the complete results of the four series of cases analyzed.

TABLE III

Series	No. of cases	Cured	Improved	Not improved	Died	% mortality	% cured or improved
First	29	11	2	4	12	41.4	45.0
Second	31	14	5	4	8	26.0	61.0
Third	40	19	17	0	4	10.0	90.0
Fourth	26	16	1	2	7	26.9	65.5
Total	126	60	25	10	31	24.6	67.4

SUMMARY AND CONCLUSIONS

One hundred twenty-six cases of primary abscess of the lung have been considered.

From the standpoint of treatment these cases belong in two series; a smaller one of 29 cases where surgery was used as soon as the diagnosis was established; and a larger in which surgery has assumed an increasingly minor position due to a well established and properly executed regimen of conservative treatment built upon the principle of rest and drainage by posture with the aid of the bronchoscope, pneumothorax, and salvarsan whenever such assistance seemed indicated.

Under such a system of therapy it can be reasonably expected that almost 70% of cases will be eventually cured.

In order to insure the best results there must be the closest co-operation among the internist, surgeon, roentgenologist, and bronchoscopist with no one type of treatment applicable throughout in all cases.

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TRANSFUSION OF BLOOD*

By JULIUS G. KELLEY, M.D.

PROVIDENCE, R. I.

Transfusion is a therapeutic procedure usually considered, and not infrequently, definitely indicated in the treatment of many diseases of the blood. Perhaps no single therapeutic measure surviving to the present day has had such a long and variable history in legend and fact as has the transfusion of blood, even antedating circumcision in its hypothetical geneology. It has really become useful and valuable only recently due to the attention and serious consideration stimulated by the study of the iso-agglutination phenomena in 1909-1910 and especially during the World War.

With the beginning of the 20th century came the recognition of iso-agglutination and the phenomena attendant upon the incompatibilities of human blood. This knowledge was used mainly as a possible diagnostic point in disease and no trial application to blood transfusion was made. This was probably due to the fact that the procedure was in a period of disfavor.

The first transfusion to be done at the Rhode Island Hospital and I believe the first in Providence, was performed by Dr. E. B. Smith in 1904. The blood was given by the direct method, using a Crile tube to anastomose the radial artery of the donor with a vein at the elbow of the recipient. The blood was given by a friend to combat shock and hemorrhage traumatic in origin. The patient had no reaction and made an uneventful recovery.

The period from 1908 to the present time has brought great success and demonstrated the usefulness as well as the limitations of this procedure. In 1909 Janski showed that all human beings are divided into four groups in regard to the agglutination reaction of their R. B. C. and sera. Landsteiner also described similar findings on a different group of people about this time. In 1910 Moss brought out a table which was the exact similar to that of Janski and Landsteiner except that he had numbered his group in exactly the reverse order. The grouping generally ac-

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cepted in this country is that compounded by Moss and will be that used in this paper. The types are:

- I. Universal recipient—can take blood from all groups, but can give blood only to Type I.
- II. Can take blood from Types II and IV only and can give to Types I and II.
- III. Can take blood from Types III and IV and give to I and III.
- V. Can take blood only from Type IV but is the universal donor.

The mechanism of auto agglutination is still largely a matter for speculation. The Moss grouping may be shown in a diagram.

Recipient	Donor				
	Types	I	II	III	IV
I		0	0	0	0
II			0		0
III				0	0
IV					0

The following table gives approximately the relative frequency of the four blood groups.

Group I, 5%; Group II, 40%; Group III, 10%; Group IV, 45%.

The testing of compatability of bloods can be done by agglutination tests in two ways.

The obvious method is, of course, to test the reaction of the cells of the donor with the serum of the recipient and the serum of the donor with the cells of the recipient. If both tests are negative it indicates that the two bloods are compatible for transfusion. Such tests do not tell us to what group the individuals belong nor do we necessarily care, for we aim to transfer blood of one group to the same group.

However it is often desirable, and in certain instances simpler to identify the group of both patient and donor. This may be done by having available known sera of groups II and III and a suspension of red cells from the blood to be tested. Such a procedure is possible because, as will be seen by reference to the table that indicates the agglutination reactions between the cells and sera of the different groups, there are but four possible combinations of positive and negative reactions of unknown cells with known sera II and III. Hence: If cells are agglutinated by both sera they are from Group I. If by neither sera group IV. And if by sera II they are type III. And by sera III they are type II.

In order to make a test between serum (fresh or stock) and red cells the following simple procedure with chemically clean glassware will usually suffice. A suspension of cells (about 5%) is obtained by the addition of 3 to 5 drops of blood to about 2 c.c. of one percent solution of sodium citrate in 0.9 percent sodium chloride solution. These cells need not be washed. A drop of the red cell suspension is mixed with a drop of serum on a cover slip and used as a hanging drop. A glass slide and cover slip may be used, but the hanging drop make a neater technique and avoids drying. The test should always be made microscopically to avoid possible errors.

The agglutination is usually very rapid and very definite. In order to avoid possible errors, it is always wise to wait 20 to 30 minutes. While there are few opportunities for confusion in this simple test nevertheless the penalty of transfusion of incompatible blood may be so great that every care should be given to the performance of the test. If by the method described the reaction is not clear and perfectly definite, the test must be repeated and perhaps amplified. A safe rule is never to regard as negative a reaction of which there is the least doubt. In practice it is always well to discard as a donor one whose blood causes any doubt about his group, or especially about the reaction of his cells with the patient's serum.

So far we have considered only the compatability of the bloods as regards the donor and recipient. The donor should always be selected with care. The related are said to be preferable to the non-related. Young people, male or female, are more desirable than older ones. Examination should exclude all involved in acute or chronic pathological conditions—especially the septic, syphilitic or tubercular. In the southern states one should always be sure that the donor is free from malaria. All professional donors should have a negative Wasserman reaction.

The question always arises as to the possible harm to the donor from transfusion. It is not at all uncommon that he become faint, particularly when the blood is rapidly extracted. The syncope is associated in part with the general nervous condition, attendant upon the excitement of such an operation and in part due to the sud-

den diminution in blood volume. The blood volume will however be made up rapidly from the fluid reserve of the body, and the red corpuscles will be replaced in a few weeks. When 500 c.c. are taken from the donor, he will feel as well as ever within a few hours after the operation. When 1000 c.c. are taken there may be a certain amount of lassitude for two or three days, presumably until the blood volume is entirely compensated. Several transfusions each of 500 c.c. from a single donor may be performed at intervals of a week or more without apparent disturbance of any consequence (Kimpton).

In considering the recipient of the transfused blood, it would be well to discuss what becomes of the component parts of the introduced blood.

In 1919 Ashby found evidence of the presence of red corpuscles after 30 days. Ames in 1922, using group IV for transfusions to other groups, by agglutination, found that the R cells live for 20-40 days in the average case. In pernicious anemia—90 days. Hopkins in 1910 found extensive phagocytosis of transfused corpuscles within twenty-four hours. With the brilliant work of Barcroft in 1925 on the pole of the spleen, as a potential reserve storehouse for R. B. blood corpuscles, comes a conception of the possibility of a portion of the transfused cells residing in this haven for indefinite periods, and on occasion re-entering the peripheral circulation.

The transfused white corpuscles are of a very short life. A leukemic donor with a W. B. C. of 150,000 gave blood to a well patient. It was found that the white count returned to normal in two and one-half hours. Kordenat and Smithers (1925) described the nonhemolytic anaphylatoid delayed and constitutional responses after transfusion as probably due in part to the disintegrating white blood cells.

The platelets are very essential, aiding in the process of coagulation and tending to prevent further bleeding. The part they play in reaction is mainly conjecture.

The plasma furnishes the liquid medium and its exact relation to reactions is little understood. Ehrlich said in 1900 that "blood serum is the carrier of substances innumerable as yet little known or conceived of"—this I believe to be true today.

There is considerable information as to the results of transfusion of incompatible bloods, that is to say, bloods in which the serum of the recipient will agglutinate the red blood corpuscles of the donor. Inasmuch as only 20 to 25% of the instances where iso-agglutination occurs does iso-hemolysis occur, the chances are, of course, good that there will be no reaction of iso-hemolysis. Although the evidence indicates that iso-hemolysis is much more important clinically than iso-agglutination, nevertheless the reaction of iso-agglutination is to be avoided in the body. Hemolysis, when present, may be mild and associated in any given case with only mild hemolytic jaundice; there may be a small amount of hemoglobin in the urine or none at all. Usually with the transfusion of an incompatible blood, with which there is hemolysis, there follows a fairly definite course. The patient becomes restless and anxious, usually during the transfusion. Those experienced in transfusion recognize this and stop the operation. The patient becomes steadily more restless with rising respiratory and pulse rates and usually complains of pain in the back. Nausea and vomiting, an elevation in temperature, and a chill rapidly follow. Death may occur on the table or any time within twenty-four hours. But even in the face of a stormy time with very grave symptoms, the majority of patients recover after a high temperature with jaundice and hemoglobinuria. In some disease conditions, particularly sepsis and blood disease, the blood seems to be definitely altered with the presence of hemolysins and agglutinins not usually found. The abnormal substances cause reactions even when the donors have been selected by the usual compatibility tests. These perhaps might be ruled out by proper tests for hemolysis, but probably would occur from any blood given. I have seen but one true hemolytic reaction—that occurring in a nine years old male child suffering from acute hemorrhagic purpura. He was given 300 c.c. of citrated blood from the mother, had no reaction—was improved for several days. On the fifth day following transfusion he began again to bleed, and on the sixth day was again given a transfusion of blood. The second transfusion was given by the Scannel Method and about 280 c.c. of whole blood was taken from the mother and given to the child.

without any apparent difficulty. The first transfusion was done after very satisfactory compatibility test, but no repeat tests were done before the second operation. About three hours after the child came from the operating room he had a profound chill lasting about an hour, his temperature rising to 106—, rapidly dropping back to 104, to 103. The skin and mucous membranes gradually blanched and there was a marked hemoglobinuria. The patient died about 16 hours after the operation. This experience bears out the theoretical assumption; that a slightly incompatible blood may be given once without any marked disturbance, the second procedure is followed by a marked and even fatal outcome.

The commonest reaction seen after transfusions is not due to hemolysis or agglutination. This type of reaction therefore, cannot be anticipated. It is probably due to the instability of the blood when removed from the body. The frequency of this type of reactions is very variable and will be found to be much less among the operators whose experience is large. The onset of the symptoms usually occur about one hour or less after transfusion and are usually entirely gone within from 12 to 24 hours. Symptoms are rarely alarming,—consisting of a chill and moderate hyperpyrexia with the attendant signs of protein intoxication. I have seen several cases of mild urticaria, but none of petechiae mentioned in the literature as occurring occasionally.

As has been indicated, with the simplification of the technical procedures involved in the transfusion of blood, and with the increased scientific understanding and control of the many factors associated with former untoward results, there has come an ever increasing number of clinical conditions in which transfusions is being used. In general transfusion is indicated in all those pathological condition where blood in quantity and quality is so altered that it is unfit to fulfill its physiological duties (Lisrinkis, 1872).

Transfusion definitely indicated in:

I. Severe hemorrhage—acute or chronic.

Traumatic, surgical, obstetrical or medical always presents the ideal indication from infancy to senility, for a replacement of the lost fluid tissue of the body. In the hemorrhagic diathesis of the new born, in puerperal hemorrhage and in

hemophilia, transfusion is specific. Purpura seems refractory to this treatment except for temporary increase of platelets.

Shock—surgical or traumatic—especially with hemorrhage is best treated by transfusion. Notwithstanding the fine work of Bayliss with gum accacia during the World War.

II. Secondary anemia—turns the tide toward improvement—and enable the tissue to improve its nutrition as well as resistance.

It is of questionable value in malnutrition and prematurity; also in eclampsia.

III. Sepsis—in chronic sepsis it is distinctly beneficial—and helps the secondary anemia present.

Transfusion should never be used in acute sepsis.

IV. Primary blood diseases—all—except in pernicious anemia and may be used even then if patient's condition warrants it.

The use of auto transfusion is always questionable except possibly in unexplained hemorrhage—especially chronic. This measure is not in any sense curative and in many instances only palliative to a very limited degree.

There are many techniques, old and new, but in main there are two essentials demanded of all:—

(1) The assured delivery of blood cells which will function—and (2) the assurance to the operator of the amount of blood transfused.

The *modus operandi*:—

Of the methods in use today with their many modifications, two general types of procedures may be recognized.

(1) Direct blood transfusion by anastomosis of vessels with or without cannula, and

(2) Indirect transfusions with or without anticoagulants by means of syringe or paraffin tube.

I shall devote very little time to the first type of work, as I have done none or have I seen any done. The second or indirect methods are receiving the larger amount of attention at the present time—and it would be well to mention and discuss some of the most used technique.

I. Kimpton and Brown's technique of indirect blood transfusion by special blood collector and transfuser:— A large glass tube of peculiar construction is used as the collector, reservoir, and dispenser of the blood—having a corked upper

and a small side tube projecting from the large tube a little way below the upper end,—and terminating in a trapped ending (trapping when the tube is horizontal) which is drawn out into a smooth, beveled cannula-point 2 or 3 mm. in diameter. The tube is smoothly coated on its interior with paraffin. To fill the tube—insert the cannula into an incised vein or needle in a vein and blood is allowed to flow in, as it is held in a vertical position. To deliver the blood—lower the tube to the horizontal and insert the cannula into a vein of the recipient, bring the tube again to the vertical position and allow blood to flow in either by gravity or by a pressure bulb attached to upper projecting small tube. This method requires a great deal of surgical dexterity and necessitates a smooth working team. And even in the best hands a tube of blood may be lost: i. e., coagulated, before it is introduced into the recipient.

II. The Scannel and Unger transfusion sets are of a similar nature, both having a set of valves which are worked by hand in taking blood from donor into a syringe and thence into the recipient. Both of these methods are very good and usually result in the patient receiving a good amount, but occasionally not the entire amount that had been primarily desired.

III. The third whole blood transfusion method, without the use of anti-coagulants, is the multiple syringe technique. This requires several pairs of hands and provided there is no difficulty in introducing the blood into the vein of the recipient it is an ideal method. The surgeon takes the blood in a clean syringe of 20 to 30 cc. calibre—passes it to the man giving the blood, after the blood is given, the syringe is carefully washed with saline (which may have a small amount of citrate in it). While the blood is going into the patient, the donor is giving the second syringe full which is passed on in a like manner. By having six or seven syringes it is possible to carry on this process until enough blood has been transfused.

These three methods are the ones commonly used at the Rhode Island Hospital in the giving of blood to patients in whom the citrate method is not desirable; mainly in hemorrhagic and purpuric diseases. The indirect transfusion of blood treated with sodium citrate as an anti-coagulant

has largely replaced direct vessel-to-vessel methods;—because of its greater simplicity, and the possibility of determining the exact amount of blood transferred. The procedure is rendered safe against coagulation during the transfer, by the admixture of an anti-coagulating sodium citrate solution.

The equipment consists of (1) a suitable supply of intravenous needles; (2) a 1000 cc. florence flask fitted with a 2 hole rubber stopper and with rubber and glass tubing—one opening for the incoming blood the other for suction; (3) measuring graduate, 25 to 55 cc. capacity; (4) and salvarsan-flask, with rubber tubing and interpolated glass connecting piece. The donor's arm is surgically prepared, and a tourniquet applied above the site of vein-puncture. A large needle is introduced directly thru the skin into the vein and the blood is allowed to pass into the florence flask, into the bottom of which the citrate solution has already been put. We use 10 c. c. of a 2½% sodium citrate solution per 100 cc. of blood. The assistant furnishes the necessary negative pressure in the flask by a suitable suction apparatus, and also gently agitates the mixture while the blood is flowing in.

The collected blood, mixed with the citrate solution, is now injected into a vein of the already prepared arm of the recipient, through a suitable needle. It is always well to use as large a needle as possible. This part of the operation is done in exactly the same way salvarsan solution is injected—first running through about 50 cc of normal saline solution to make sure that you are in the vein cleanly.

This method is the one most commonly used, because of its simplicity and the blood is not lost if there happens to be a slight mishap or delay.

In the year 1927 there were 41 transfusions done at the Rhode Island Hospital.

31 by the citrate method
3 by the multiple syringe method
3 by the Scannel method
2 by the Unger method
and 2, method not stated in record.

They were given for the following conditions:
Chronic sepsis with secondary anemia—6 transfusions.

Carcinoma (abd.) in preparation for operation
—2 transfusions.

Ruptured ectopic pregnancy—7 transfusions.
Secondary aplastic anemia—2 transfusions.
Menorrhagia (causes stated)—5 transfusions.
Nephrectomy and hemorrhage with general peritonitis—4 transfusions.
Acute lymphatic leukemia and purpura hemorrhagica—1 transfusion each.
Bleeding duodenal ulcers—5 transfusions.
Traumatic hemorrhage and Shock—5 transfusions.
Abdominal hemorrhage from graffian follicle—1 transfusion.
Pernicious anemia—2 transfusions.

There were no hemolytic or agglutination reactions recognized, and the mortality rate among the transfused patients was 12%.

The non-hemalytic anaphylactoid reactions were 22.2% in those transfused by the citrate method, and 18% in those in which whole blood was given without the use of any anti-coagulant. The reactions varied from a very small rise in temperature to the most severe in a middle aged female with the secondary aplastic anemia. Her reaction began with a chill about an hour after transfusion, which continued for about an hour and was followed by a hyperpyrexia of 105,—it was 3 days before the temperature fell to normal.

In conclusion let us mention the three important things to keep in mind in doing a blood transfusion:—

1. It has been demonstrated beyond all doubt that blood is toxic in direct proportion to the chemical alteration toward coagulation, particularly dangerous, because invisible, in the preclot stage. This must always be a spur to speed and efficiency in transfusion without anti-coagulants, and where they are used, the thoroughness and completeness of the immediate effect in preventing coagulative changes must be assured.

2. In repeated multiple transfusions where sensitization against a possible foreign protien is indicated by difficulty in securing suitable donors, not only must compatibility of the formed elements be assured, but also the same precautions now used in serum (horse serum) therapy should be taken i. e., desensitization.

3. In pathological conditions the plasma contains hypothetical non-specific toxins foreign to the normal state, which may act either independently or as catalyzers on the normal mechanism,

to complicate or endanger the receiving of foreign blood. This obliges using fresh cells and serum in matching donor and recipient.

CHRONIC LEAD POISONING FROM SNUFF

Of three cases of chronic lead poisoning from the habitual use of snuff containing lead, reported by Joseph Uttal, New York (*Journal A. M. A.*, January 28, 1928), two resulted in marked polyneuritis with bilateral wrist drop and extensive muscular atrophy; one resulted in marked secondary anemia. All three cases were chemically proved by the identification of lead from the snuff used by the three patients. Lead was also found in significant quantities in the excreta of two of the three patients. The continued sale of this snuff constitutes a menace to public health. Snuff tobacco may contain lead from two sources: 1. Snuff wrapped in tin-foil containing a large portion of lead in its composition may cause lead poisoning if the contents become moistened by causing minute amounts of lead to pass into solution and become incorporated in the snuff. The continual inhalation of lead in small amounts will lead to chronic poisoning because of the cumulative nature of the poison and also because the respiratory tract is the most rapid source of the dissemination of lead, since it leads directly to the general circulation and avoids the detoxifying action of the liver. Such a case causing fatal poisoning was reported by Stadler. A certain specimen of snuff used by a woman was wrapped in metal foil containing 89 per cent lead, although the Swiss code of 1909 forbids the use of such foil when it contains more than 1 per cent of lead. The snuff when examined was moist and contained from 1.75 to 1.90 per cent of lead. This caused a fatal intoxication by habitual use. Zangger states that the daily dose of from 8 to 10 mg. of lead causes chronic poisoning. 2. Lead may be an actual adulterant of snuff tobacco. It is used in the process of the manufacture of snuff as a coloring agent in the form of lead chromate. In the cases reported, the snuff suspected and proved to contain lead was the most inexpensive of the available brands. This particular brand of snuff was the product of one manufacturer.

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Dr. Francis B. Sargent, President; Dr. Joseph E. Raia, Secretary-Treasurer.

The R. I. Medico-Legal Society—Last Thursday—January, April, June and October. Roy McLoughlin, President; Dr. Jacob S. Kelley, Secretary-Treasurer.

EDITORIALS

REMUNERATION

One who, with zeal for knowledge, seeks the source of our present success in utilizing the forces of nature for our advantage and comfort, finds all the lines of inquiry converging to the work of Michael Faraday. (1791-1867). As assistant to Humphrey Davy in the laboratories of the Royal Institute and later, as an independent worker, he made a series of discoveries and inventions unequalled in present day utility. He pro-

duced, chlorine, benzine, nitro-benzol and analine. From his work shop came the induction coil, the electric motor, the dynamo and the magneto-electric light. He showed that a ray of light could be bent from its course by an electro-magnet, thus anticipating the theory of relativity. His study of specific inductive capacity made possible the submarine cable. Davy had suggested the use of nitrous oxid gas to allay the pain of surgical operations. Faraday found that sulphuric ether had a similar effect.

For his work at the Royal Institute, Faraday received from an endowment the sum of 200

pounds a year. From other professional work he received, in 1830, 1000 pounds. This sum might readily have been increased in this and in succeeding years. At this time he was absorbed in the problem of the evolution of electricity from magnetism and deliberately decided to give up all other professional work in order to devote his time entirely to experimental science. He said, "In consequence of the good will and confidence of all around me, I can at any moment convert my time into money, but I do not require more of the latter than is sufficient for necessary purposes." For the remaining thirty-seven years of his life his income was limited to 200 pounds a year "with house, coals and candles." Considering his great personal sacrifice and on the other hand, the tremendous value of his work to humanity, was Faraday justified in his deliberate decision to remain a poor man for the benefit of science? In these days, when commercial tendencies invade the professions to a marked degree, the question is an absorbing one which each may decide as he sees fit. Faraday's decision leaves us an ideal, perhaps unattainable yet salutary. His scientific discoveries, from which humanity has profited by countless millions, to Faraday were beyond price.

NATIONAL HEALTH DEPARTMENT

The President and many members of Congress for some years have been interested in the reorganization of the executive departments. There is much over-lapping of work. There are too many bureaus in some of the departments which makes for inefficiency, for the secretary of such a department probably is not able to familiarize himself with all of the details and personnel of his department. For the sake of efficiency, in view of the frequent changes in the cabinet, it might be advisable to have more departments and not load up any one department with too much work or with such a variety of duties that the secretary cannot possibly make the department efficient.

In the departmental reorganization it would be of great help in the interest of public health to bring into one department all the bureaus which are concerned with matters pertaining to health. Vital statistics are now in the Department of

Commerce, the Public Health Service in the Treasury Department and other health activities are scattered in other departments and bureaus. In many instances the secretary and bureau chiefs are neither vitally interested or properly qualified to further the interests of public health. Neither is there any effort to co-ordinate matters pertaining to public health.

Many European countries have a ministry of health headed by some physician especially qualified for his duties. For a great many years efforts have been made to establish a separate department of health at Washington but these efforts have been frustrated by politicians and by heads of bureaus who feared that they might lose the positions which they held.

It certainly is logical and there is little doubt the people generally would welcome a department of health with a cabinet member at its head. The public generally is very keen about matters concerning public health. They are convinced that the modern health movement has already accomplished great things in preventing disease.

It would not be advisable for the national department of health to take over duties now exercised by the state health department except possibly the licensing of physicians. Its duties should be confined to protect the country against entrance of infectious diseases and sick emigrants who might become public charges, to gather, publish and explain vital statistics, to supervise the manufacture and distribution of drugs, chemicals and biological products used in the treatment of the sick, to be prepared to investigate outbreaks of infectious diseases and advise the several state departments, to be prepared to take control of health matters arising during great disasters, to educate the people about public health and assist states in putting in practice such measures against disease as have been proved to be efficient, perhaps to license physicians, etc. Certainly our government has no more important task than that of guarding the health of the nation and certainly these activities are sufficiently important to justify the creation of such a new department headed by a cabinet officer.

The success of such a department depends upon the character of the secretary and his assistants and it would be highly desirable for these officers to be more or less permanent so that policies of

the department might continue. While the cabinet members are usually changed with the inauguration of each new government, it is quite possible that the secretary of this department might, if efficient, be carried from administration to administration. Precedent for this has already been established in the case of Mr. Wilson who was for many years Secretary of Agriculture.

To bring about the establishment of a national department it is necessary for several state medical societies, the American Medical Association, The American Public Health Association, and many other national associations interested in the promotion of health measures, to make a concerted effort to bring pressure to bear upon the new President and the incoming members of Congress. Both of the presidential candidates, judging by their past performances, are very much interested in promoting measures to safe-guard the nation's health. And there is little doubt the people generally would lend their support to such a change. That there might be some opposition from certain persons in government service and for personal reasons, and from certain members of certain cults, is admitted. This opposition should not and beyond doubt would not be sufficient to prevent this greatly needed reorganization.

A GRAIN OF SAND

Some of the noblest and most inspiring chapters in the history of medicine have been written by members of our profession who have devoted their entire lives to the study of its problems in research laboratories. Much has been learned in this fashion of which we should otherwise be in entire ignorance, and a great deal of our everyday practice is based upon such discoveries. To a comparatively small number, however, is granted the privilege of thus serving humanity. The majority of us work in a much larger laboratory in which countless experiments, some of them much more critical than any we would dare to perform, are constantly provided by nature. Every day we see the early stages, the progress and the end results of many such experiments and we need only study them carefully to learn a great deal about the response of the human body to infection and injury. Of late years Sir James Mackenzie was the

foremost exponent of this sort of study by the practicing physician, and a large proportion of our present knowledge of heart disease is a direct result of this method of investigation. The material is constantly available; we need only observe, study and correlate what others have learned on the same subject. A simple way of doing this, and one which could well be developed in our district societies, is the presentation of case reports at all meetings; the report to include not only the individual case under discussion but a careful *resumé* of the literature upon the subject. In this and similar ways we may come to a realization of the belief of the old Dutch "Heelmaster," Jobi a Meek'ren, as he expressed it in the seventeenth century: "If each one of us adds one grain of sand to the complement of the illustrious and noble Art of Medicine, soon immense treasures and innumerable gifts will be brought together to fill the needs of ourselves, our fellow-citizens, and our posterity to cure disease surely."

SOCIETIES

THE 117th ANNUAL MEETING OF THE RHODE ISLAND MEDICAL SOCIETY JUNE 7, 1928

ORDER OF BUSINESS

Call to order	President
Reading of Minutes	Secretary

Recognition of Delegates from State Medical Societies:

1. Connecticut State Medical Society
Dr. Walter L. Barber, Waterbury, Conn.
Alternate
Dr. Hugh B. Campbell, Norwich, Conn.
2. Massachusetts State Medical Society
Dr. A. R. Crandell, Taunton, Mass.
Dr. E. D. Gardner, New Bedford, Mass.
3. New Hampshire State Medical Society
Dr. Deering G. Smith, Nashua, N. H.

The 117th annual meeting of the Rhode Island Medical Society was held at the Medical Library, Providence, R. I., June 7, 1928. The morning session was called to order by the President, Dr. Norman M. MacLeod, at 10:00 A. M.

The reading of the minutes of the meetings of the Council and the House of Delegates, and the

last regular meeting of the Society was presented by the secretary. This report included the annual report of the secretary, and of the Standing Committees.

The Chair recognized Dr. A. R. Crandell of Taunton, Mass., as delegate from the Massachusetts State Medical Society. Dr. Crandell presented the cordial good wishes of the Massachusetts Medical Society to this Society on the occasion of its annual meeting.

Dr. Eric Stone, secretary of the Trustees of the Fiske Fund, presented his annual report of the Fund. The Trustees reported that the prize of \$250.00 offered at the last annual meeting for the best essay on the subject "Epidemic Encephalitis, Etiology, Pathology, Symptomatology and Treatment" was awarded to Dr. Charles R. Rayburn, 111 State Drive, Norman, Okla. The Trustees also announced that a prize of \$200.00 for 1928-29 would be awarded for the best essay upon the subject of "Pathology, Symptomatology, Diagnosis and Prognosis of Brain Tumor."

Dr. Stanley Sprague, Chairman of the Committee on Necrology, read obituaries on the following deceased members:

REPORT OF CHAIRMAN OF COMMITTEE ON NECROLOGY

1927-1928

1. JAMES N. LEWIS, M.D.
 - a. Born Pawcatuck, October 30th, 1849.
 - b. Attended Hopkinton Academy, Alfred University, College of Physicians and Surgeons at Columbia University.
 - c. Practiced medicine for 50 years in Ashaway. (Retired 12 years ago.)
 - d. Was charter member and one time president of Washington County Medical Society; member of State Society and Am. Med. Assoc.
 - e. Death due to heart trouble—May 28th, 1927.
2. WILLIAM A. SHERMAN, M.D.
 - a. Born at Newport, 1876.
 - b. Graduate of Newport Schools, Harvard and Harvard Medical.
 - c. Activities in Newport.
 1. Member of Medical Staff, Newport Hospital.
 2. One of the medical examiners of the city.
 3. Member of City Council.
 4. Member of Newport Board of Health.
 5. Member of Henderson Home for Aged Men Commission.
 6. Member of Newport County Medical Society; State Society.
 7. Vice President of Newport National Bank and of the Savings Bank of Newport.
 - d. Death due to heart attack—June 17th, 1927.
3. LAMERT OULTON, M.D.
 - a. Born New Brunswick, Canada, July 4th, 1882.
 - b. Early education received in Canada and New Hampshire.
 - c. Received Ph.G. degree from Mass. College of Pharmacy; and M.D. degree from Tufts.
 - d. Member of Active Surgical Staff, Memorial Hospital; and Associate-Surgical Staff, Homeopathic Hospital.
 - e. Died July 6th, 1927.
4. CHARLES PECKHAM, M.D.
 - a. Born Providence, September 11th, 1869
 - b. Educated at Mowry and Goff School, Providence; College of Physicians and Surgeons, N. Y.
 - c. Practiced with father, Fenner H. Peckham, M.D.
 - d. Served with Naval Reserve during the Spanish-American War.
 - e. Became Surgeon General of State Militia, retiring with the rank of Brigadier General.
 - f. Married January 4th, 1916.
 - g. Member of Hope, University and Anawan Clubs; and Army and Navy Club of Washington.
 - h. Died August 16th, 1927.
5. JOHN J. BAXTER, M.D.
 - a. Born Providence, June 20th, 1860.
 - b. Graduate of La Salle Academy; received M.D. degree at Bellevue Medical School, N. Y.
 - c. Trustee Woonsocket Hospital; member of American Med. Assoc., R. I. Medical Society and Woonsocket Med. Soc.; Fellow of American College of Surgeons.
 - d. Practiced 43 years in Woonsocket.
 - e. Death due to attack of indigestion, September 13th, 1927.
6. AUGUSTINE A. MANN, M.D.
 - a. Born at Randolph, Mass., 1837.
 - b. Educated at Randolph schools; graduate of Jefferson College of Medicine.
 - c. Enlisted in Civil War, 1862.
 1. Served as Assistant Surgeon and Lt. in first R. I. Cavalry.
 2. Prisoner at Libby Prison from June 25th to November 24th, 1863.
 - d. Practiced medicine in Central Falls.
 - e. Member of C. F. Common Council; charter member of Ballou Post, G. A. R.
 - f. Died at age of 91 years, February 12th, 1928.
7. LESTER J. GILROY, M.D.
 - a. Born Attleboro, 1897.
 - b. Educated at Attleboro Schools; graduated from Tufts, 1915; graduated from Tufts Med. 1920.
 - c. Internship:—
 1. 1921—Carney Hospital, Boston.
 2. 1922—Providence City Hospital.
 - d. Member of Staff at O. P. D., Memorial Hospital; member of R. I. Medical Society; Phi Chi fraternity; Knights of Columbus.
 - e. Practiced in Pawtucket for past 6 years.
 - f. Died April 2nd, 1928.

8. HENRY C. HALL, M.D.

- a. Born 1855. (Providence?)
- b. Graduate of Harvard Medical School.
- c. Private Practice one year.
- d. Member of Staff at Butler Hospital.
- e. One of the earliest specialists in mental diseases in this country.
- f. Member of American Psychiatric Association; Boston Society of Neurology and Psychiatry; University Club.
- g. Died April 7th, 1928.

9. JOHN F. KERINS, M.D.

- a. Born North Adams, 1860.
- b. Educated at Holy Cross College, 1883; graduate of Bellevue Hospital Medical School.
- c. Practiced in Providence.
- d. Member of R. I. Medical Society; American Medical Association; member of Elks, Eagles and Forresters.
- e. Died April 18th, 1928.

10. ALEXANDER B. BRIGGS, M.D.

- a. Born Hopkinton, R. I., November 12th, 1850.
- b. Educated at Hopkinton Academy and Harvard University.
- c. Was assemblyman, banker and active in textile, twine, oil and protective firms.
- d. First practiced medicine with Dr. J. H. Merrill of Potter Hill.
- e. Member of State Board of Health; R. I. and American Medical Societies; Pan-American Medical Congress; American Public Health Association.
- f. Retired two years ago from active practice; died June 5th, 1928, at Harris.

The secretary called attention to the illness of Dr. James H. Davenport and moved that a letter of good wishes be sent to Dr. Davenport now confined in a hospital. It was so voted.

The following papers were presented:

1. "A plea for the Cross-eyed Child," Joseph F. Hawkins, M.D., Providence, R. I. Discussion by Drs. Leech, McCabe, Harvey, Dowling, Tingley, Utter, MacLeod, Van Benschoten, Hawkins.
2. "Diagnosis and Treatment of Renal and Ureteral Stone," Charles O. Cooke, M.D., Providence, R. I. Discussion by Drs. Jamieson, Kerney, Oddo, Batchelder, Cooke.

Recess was taken at 1 o'clock and luncheon was served in the Medical Library.

At 2:15 P. M. the President again called the meeting to order.

The treasurer, Dr. Jesse E. Mowry, announced the donation of \$2000.00 to be known as the Herbert Terry Fund. The income from the Fund is stipulated to be used for the purchase of books

and periodicals and for the binding of same for the Medical Library. The Society accepted with deep appreciation the bequest of the Herbert Terry Fund. This bequest comes to the R. I. Medical Society through the generosity of the late Arthur S. Kenyon, and his sisters, Florence and Catherine.

The following papers were read:

1. "Fundamental Principles in the Artificial Feeding of Infants," Richard M. Smith, M.D., Boston, Mass. Discussion by Drs. Calder, Utter, and Smith.

2. "Abnormalities of the Urinary Tract," (Lantern Slides) William E. Ladd, M.D., Boston, Mass. Discussion by Dr. Kingman, Dr. Oddo.

3. "Recent advances in the Classification and Treatment of Acute and Chronic Nephritis," Channing Forthingham, M.D., Boston, Mass. Discussion by Drs. Wells, Mathews, Newsam, Wing, and Forthingham.

Dr. J. E. Kerney demonstrated a new filing card for cases of syphilis.

The President, Dr. Norman MacLeod, then read the annual presidential address.

The President-elect, Dr. A. H. Harrington, was inducted into office, and the meeting adjourned to re-assemble at the Narragansett Hotel for the annual banquet. Dr. E. V. Murphy of Newport presided as Anniversary Chairman, and the Speaker of the evening was Rev. Roy Magoon, Director of the Seaman's Institute of Newport.

Adjourned.

J. W. LEECH, *Secretary*

The regular quarterly meeting of the Rhode Island Medical Society was held at State Sanatorium, Wallum Lake, R. I., on Sept. 6, 1928, through the courtesy of the Board of Trustees and the Superintendent, Dr. H. L. Barnes, of the State Sanatorium.

During the morning the Fellows inspected the new Children's Building and other parts of the hospital. At 1 o'clock dinner was served at which music was furnished by a local orchestra. The

scientific session was called to order at 2:20 P. M. by the President, Dr. A. H. Harrington. The minutes of the annual meeting were read by the Secretary. The following program was presented.

Papers. 1. "The Clearing of Tuberculous Lesions from the Lungs." Lantern slides of X-ray films. Dr. Harry Lee Barnes. 2. "Tuberculosis of the Larynx, Showing of Treated Cases." Dr. Benjamin S. Sharpe. 3. "Therapeutic Pneumothorax with Demonstration," Dr. Joseph Rosenblatt.

A rising vote of thanks on motion of Dr. Wm. R. White duly seconded was extended to the Board of Trustees and the administration of the hospital for their courtesy in inviting the Society to hold its meeting there. Unfortunately rain curtailed the outdoor program, and the meeting adjourned at 3:45 P. M.

Respectfully submitted,

J. W. LEECH, M.D.

Secretary

MISCELLANEOUS

MINNEAPOLIS MEETING OF THE NATIONAL AUXILIARY

The sixth annual session of the Woman's Auxiliary to the American Medical Association was held in Minneapolis, Minnesota, June 11-15, 1928. Over 1,200 women registered and they were delightfully entertained and cared for by the local Auxiliaries.

The business meetings were largely attended, 400 women being present at the all day session of June 14. Much interest was given to the reading of the papers and State reports. There are now well organized and efficient units in 30 States.

The abstracted proceedings will be printed at an early date and a copy sent to the entire membership.

The following officers were elected:

President: Mrs. Allen H. Bunce, 360 Ponce De Leon Avenue N. E., Atlanta, Georgia.

President-elect: Mrs. Geo. H. Hoxie, 3719 Pennsylvania Avenue, Kansas City, Missouri.

First Vice President: Mrs. Evarts V. De Pew, 115 East Agarita Avenue, San Antonio, Texas.

Second Vice President: Mrs. David W. Parker, 52 Clark Street, Manchester, New Hampshire.

Third Vice President: Mrs. Horace Newhart, 212 West 22nd Street, Minneapolis, Minnesota.

Fourth Vice President: Mrs. Frank W. Gregor, 1621 North Meridian Street, Indianapolis, Indiana.

Treasurer: Mrs. Irvin Abell, 1433 South Third Street, Louisville, Ky.

Secretary: Mrs. M. T. Edgerton, 788 Penn Avenue, Atlanta, Georgia.

Parliamentarian: Mrs. F. L. Adair, 2500 Blaisdell Avenue, Minneapolis, Minnesota.

Directors for two years: Mrs. John O. McReynolds, Dallas, Tex; Mrs. Wayne W. Babcock, Philadelphia, Pennsylvania; Mrs. A. Haines Lipincott, Camden, New Jersey.

Directors for one year: Mrs. F. P. Gengenbach, Denver, Colorado; Mrs. William E. Parke, Philadelphia, Pennsylvania; Mrs. J. T. Christison, Minneapolis, Minnesota.

Chairmen of Committees

Organization: Mrs. A. T. McCormack, Louisville, Kentucky.

Health Education: Mrs. Geo. H. Hoxie, Kansas City, Missouri.

Hygeia: Mrs. A. B. McGlothlan, St. Joseph, Missouri.

Publicity: Mrs. T. C. Terrell, Fort Worth, Texas.

Program: Mrs. Southgate Leigh, Norfolk, Virginia.

Finance: Mrs. G. Henry Mundt, Chicago, Illinois.

Entertainment: Mrs. William Kuydendall, Eugene, Oregon.

Public Relations: Mrs. E. H. Cary, Dallas, Texas.

Revision of By-laws: Mrs. Morris Fishbein, Chicago, Illinois.

Special Appointments

Auditor: Mrs. C. W. Roberts, Atlanta, Georgia.

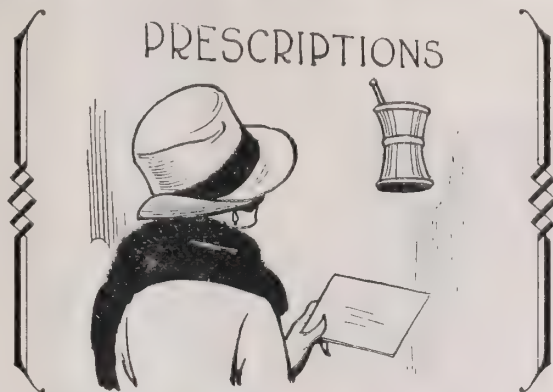
Historian: Mrs. E. V. De Pew, San Antonio, Texas.

Committee on Health Films, Chairman: Mrs. John O. McReynolds, Dallas, Texas.

Committee on Resolutions, Chairman: Mrs. J. N. Hunsberger, Norristown, Pennsylvania.

Committee on Credentials and Registrations, Chairman: Mrs. James N. Brawner, Atlanta, Georgia.

Special Advisory Committee: Mrs. S. C. Red, Houston, Texas, and Mrs. Seale Harris, Birmingham, Alabama.



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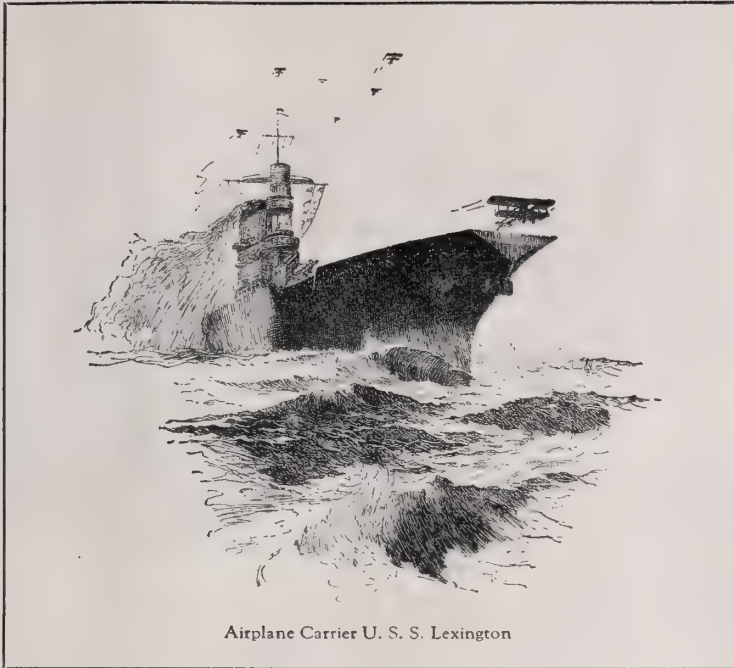


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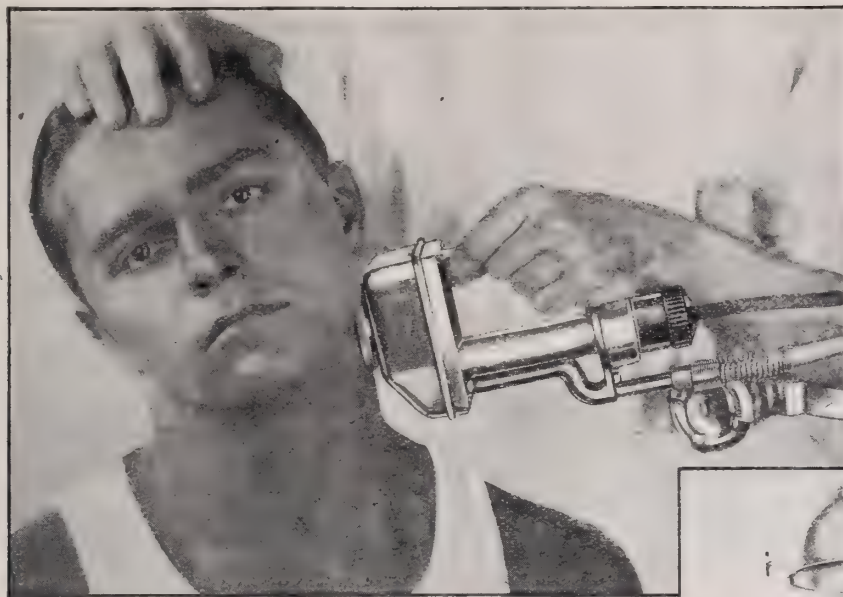
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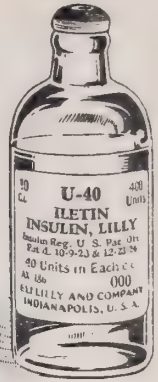
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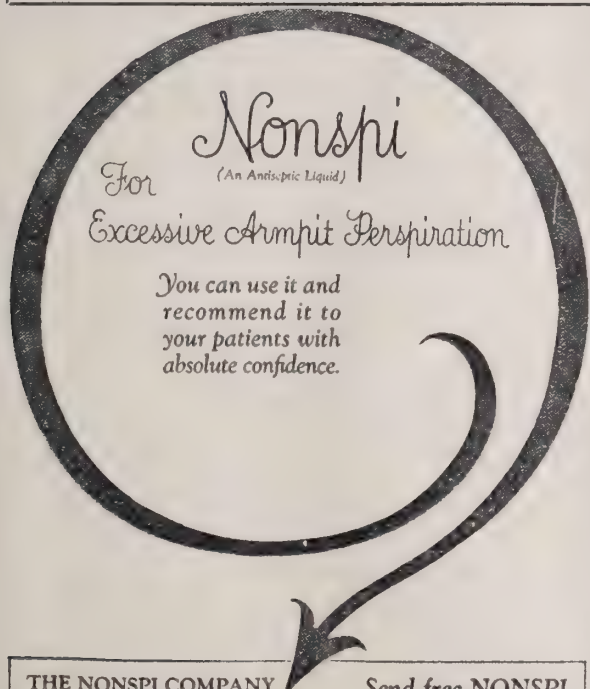
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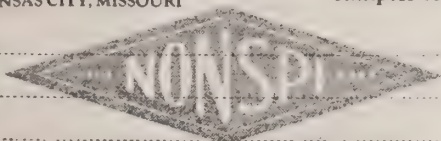
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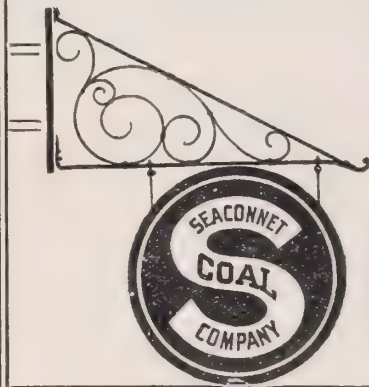
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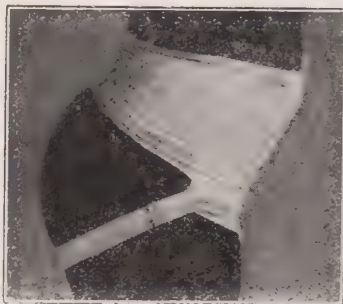
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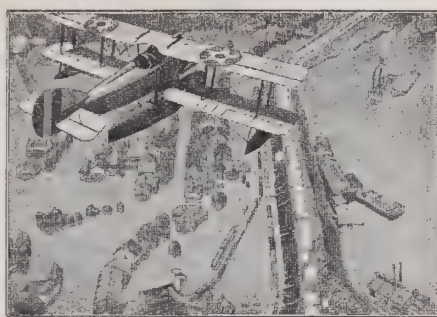
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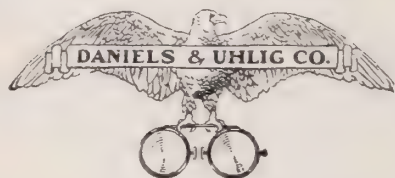
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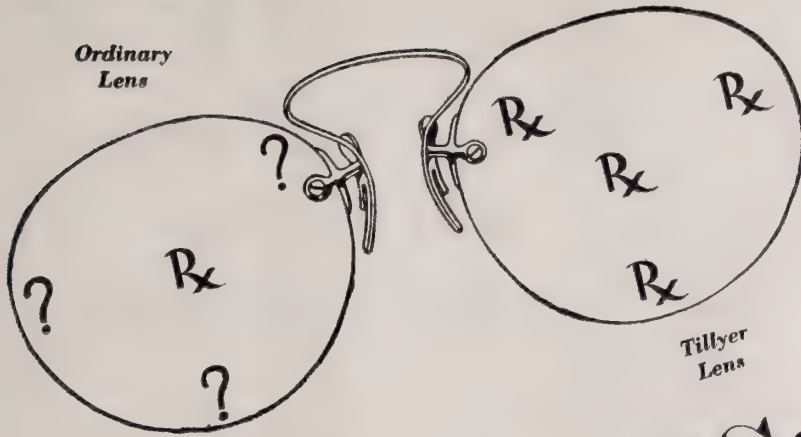
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ORIGINAL ARTICLES

POST-OPERATIVE COMPLICATIONS. II. HYSTERECTOMY COMPARED WITH APPENDECTOMY.*

BY ALBERT H. MILLER, M.D.,
PROVIDENCE, R. I.

It is a matter for regret that in Providence, as in most other centers, the importance of medical records is not appreciated. Year after year a great number of cases pass through our hospitals. Through lack of efficient record systems, the scientific value of this work is forever lost. The data laboriously collected from our present inefficient systems provide amusement rather than information. There is no limit to the number of problems which might be solved with the aid of efficient records. What is the most efficient method of skin sterilization? Has the use of rubber gloves lessened wound infection? Is a complete breast amputation justifiable in a patient over 60 years of age? Is cholecystectomy preferable to cholecystostomy? Such questions could be answered with mathematical accuracy by an efficient system of medical records.

My own records include only the comparatively small number of cases with which I come in contact at the time of operation. Patients are examined before operation and the operative risk is evaluated. During the operation, data of interest from the point of view of the anesthetic, the operation, or the patient is entered on a chart. Two weeks after the operation, the cases are checked up for complications and fatalities. Each chart bears its consecutive number. The cases are cross indexed by name, and for complications and mortality. The cross indices consist simply of lists of numbers and are made with little expenditure of time. Tabulation of any other data which is contained in the records is made in the same way and is as readily compiled. This is

the numerical system of records reduced to its simplest form.

The first paper of this series, which was published in the *Rhode Island Medical Journal* of December, 1927, compared the results of anesthesia with nitrous oxid oxygen and with ether in a series of 5,000 cases. It was found that circulatory complications, including phlebitis, coronary, cerebral, pulmonary and mesenteric embolism, and cerebral hemorrhage, occurred more frequently after gas-oxygen than after ether anesthesia. Pulmonary complications, including pneumonia, bronchitis, pleurisy, pulmonary abscess and pulmonary edema, also occurred with greater frequency following gas-oxygen than after ether anesthesia. Nausea and vomiting was considerably more prevalent after ether than after gas oxygen.

In the present paper, the cases of hysterectomy and appendectomy in a series of 8,000 consecutive operations have been tabulated. As in the previous series, these cases were checked up two weeks after operation for complications and fatalities. Significant complications which occurred at a later time have been included. From this tabulation, it is hoped that two questions may be answered: 1. Does the percentage of pulmonary and circulatory complications vary with the nature of the operation? 2. Is it advisable to remove the appendix in the course of a hysterectomy?

In tabulating the appendectomies, those done in the course of gastro-enterostomy, operations on the gall bladder, operations for hernia, or gynecological operations in which the abdomen was opened, have not been included. The result is a series of cases in which appendectomy was done alone or in combination with some minor operation. The total, 934 appendectomies, comprises 686 clean cases and 248 drained cases. The anesthetic was gas-ether in 837 cases, gas-oxygen in 62, ethyl-chloride-ether in 33 and oxygen-chloroform in 2. Gas-oxygen was chosen when clearly indicated, as in nephritis, diabetes or in the presence of respiratory infection. Following the 934 appendectomies, pulmonary and circulatory complications occurred more frequently after gas-oxygen than af-

*Read before the Amos Throop Club on February 14, 1928, and before the Providence Medical Association on May 7, 1928.

ter ether in much the same proportion that resulted from the previous tabulation. The mortality of the 686 clean cases was .58%. The four deaths were due to peritonitis, to pulmonary embolism, and, in two cases, to pneumonia. One of the deaths from pneumonia occurred in the case of an old man who had complained that a nurse had removed the heavy woolen shirt which he was accustomed to wear. The other patient had a well recognized streptococcus respiratory infection previous to the operation. The mortality in the 248 drained cases was 11%. More than two-thirds of these deaths were attributed to peritonitis already present at the time of the operation.

Five hundred fifty-six hysterectomies included 450 supra-vaginal operations, 79 pan-hysterectomies, and 27 vaginal hysterectomies. Gas-ether was used 511 times, gas-oxygen, 34 times, and ethyl-chloride-ether, 11 times. There were no complications following the hysterectomies done under gas-oxygen. One of the patients died from shock and hemorrhage on the fifth day after operation. Following the operations done under gas-ether, there was a notably larger proportion of circulatory complications and a much smaller proportion of pulmonary complications than would have been expected from a study of the previous tabulation. In 450 supra-vaginal hysterectomies, the mortality was 3.55%, in 79 pan-hysterectomies, 6.34%, and in 27 vaginal hysterectomies, 3.7%. In 250 supra-vaginal and pan-hysterectomies where the appendix was not removed, the mortality was 4.4%, but in 279 cases of hysterectomy combined with appendectomy, the mortality was 3.6%. These figures are readily explained by consideration that the appendix is not usually removed after a long or difficult hysterectomy. The mortality of supra-vaginal hysterectomy was greater in the cases where the appendix was not removed. In the pan-hysterectomies, the mortality was greater when appendectomy was combined with this operation.

The greatest number of deaths following hysterectomy were attributed to cardiac failure. One patient, a victim of toxic goiter, died from thyroidism following supra-vaginal hysterectomy. After the operation, there was a rapid rise in temperature and pulse rate, with high color, dyspnea, and fibrillation. Whether the evident effect on the thyroid secretion resulted from the operative manipulation or from the administration of the anesthetic is un-

determined. The case leads to a suspicion that other deaths following hysterectomy, accompanied by a rapid increase in the pulse rate and disturbance of the heat center, may be due to thyroidism even if the diagnosis of goiter has not been made previous to the operation or if symptoms of goiter have not been previously present.

From this tabulation, it appears that, while pulmonary and circulatory complications may occur more frequently after gas-oxygen than after ether, the percentage of these and of other complications are markedly affected by the type of operation performed. In answer to the second of the two questions propounded at the beginning of the paper, appendectomy is certainly indicated in selected cases where hysterectomy is being done but more frequently with supra-vaginal than with pan-hysterectomy.

Tabulation I
APPENDECTOMY

	Cases	Deaths	Percent.
Clean	686	4	.58
Drained	248	38	11.
Total	934	42	4.5

Tabulation II
HYSTERECTOMY

	Cases	Deaths	Percent.
Supra-vaginal	201	8	4.
With Appendectomy.....	249	8	3.25
Total	450	16	3.55
Pan-hysterectomy	49	3	6.
With Appendectomy.....	30	2	6.66
Total	79	5	6.34
Vaginal hysterectomy.....	27	1	3.7
Total	556	22	4.

Tabulation III
COMPLICATIONS OF APPENDECTOMY

	Pulmonary		Gas Ether	
	Gas	Oxygen	Gas	Ether
	Complica-	Mor-	Complica-	Mor-
	tions	tality	tions	tality
Pneumonia	1.60	1.60	.60	.24
Bronchitis .....	...	...	.72	...
Pleurisy .....	...	...	.18	...
Pulmonary abscess.	1.60	...	...	...
	3.20	1.6	1.44	.24

Circulatory			
Phlebitis .....	...	.48	...
Coronary embolism	1.60	1.60	...
Cerebral embolism.	1.60	1.60	...
Pulmon'y embolism	...	...	.36
	3.20	3.20	.84
			.36

Tabulation IV
COMPLICATIONS OF HYSTERECTOMY

	<i>Pulmonary</i>	Gas Ether
	Complications	Mortality
Pneumonia .....	.20	...
Pleurisy .....	.40	...
Bronchitis .....	.40	...
	<hr/>	<hr/>
	1.00	...
	<i>Circulatory</i>	
Phlebitis	1.20	...
Coronary embolism .....	.40	.40
Cerebral embolism .....	.20	.20
Pulmonary embolism .....	.40	.20
	<hr/>	<hr/>
	2.20	.80

Tabulation V
TOTAL COMPLICATIONS

	Appendectomy		Hysterectomy	
	Percent.	Mortality	Percent.	Mortality
Pulmonary	1.5	.32	.9	...
Circulatory .....	.96	.52	2.	.72
Phlebitis .....	.42	...	1.8	...
Parotitis .....	.53	...	.18	...
Ileus .....	.1	...	.54	.18
Infected wound....	1.4	...	1.08	...
Ruptured scar....	.32	...	.18	.18
Hemorrhage .....	.1	...	.54	.36
Uremia .....	.21	.21	.18	.18
Diabetic coma....	.1	.1	...	...
Jaundice .....	.1	...	...	...
Hiccough .....	.21	...	...	...
Thyroidism .....	...	...	.36	.18
Myocarditis .....	...	...	.18	.18
Cardiac failure....	...	...	1.44	1.44
Shock from Fowler position .....	...	...	.18	...
Exhaustion .....	...	.1	...	.36
Peritonitis .....	...	3.21	...	.18

EARLY DIAGNOSIS OF TUBERCULOSIS
RHODE ISLAND MEDICAL SOCIETY*

By HARRY LEE BARNES, M.D.

I have been asked on short notice to make a few remarks to supplement the lesson of the film, "Let the Doctor Decide."

This campaign of the National Tuberculosis Association for the early diagnosis of tuberculosis

is very timely, because a large percentage of tuberculous patients are diagnosed too late to save them or even save their families from infection.

The campaign resolves itself into two parts:

1st. Popular education which will get the patients to the physicians earlier.

2nd. Medical education which will help physicians to recognize the disease earlier. It is the second part of which I would speak.

Twenty-five to thirty per cent of our cases come from families which have previously had a loss from tuberculosis which means that all the supposedly healthy members of a family should be examined shortly after a case is found. Tuberculosis develops so slowly that the second death from tuberculosis is frequently 5 to 10 years after the first, so that annual examinations for 10 years is a reasonable minimum for adults.

The results of the examination of 157 contacts by the Sanatorium staff have been as follows:

	No. of cases	Percent.
Active tuberculosis	10	6.3
Inactive or healed tuberculosis....	13	9.6
T. B. suspects.....	35	22.3
Negative	97	61.8
	155	100

These figures are evidence that examination of family contacts is one way to get the cases early.

General practitioners should avail themselves of x-ray examinations of the chest much more frequently than they do.

All chronic patients who cough or expectorate, all cases of hemoptysis, idiopathic pleurisy, underweight, asthma, etc., should be regarded as suspicious and the sputum should be examined; first, because this examination is simplest and cheapest. If the sputum is negative, then an x-ray examination should invariably follow.

The x-ray will show tuberculosis in the lungs more accurately than physical examination.

Of 592 of our positive sputum patients, in 380, or 64 percent, the x-ray evidence of disease was more extensive than the physical signs.

How often does the x-ray fail to reveal the lung lesion in positive sputum cases? In over 2000 of our patients with positive sputum, the x-ray has shown negative films in only 5 or once in over 400 cases. This is not an absolute proof of the failure

*Read before the Providence Medical Association March 5th, 1928.

of the x-ray, because there may be an error in laboratory reports once in 400 times, and even though the laboratory reports should be infallible, the tubercle bacilli in the sputum of these 5 patients may have come from tuberculosis of a bronchial lymph node or from the larynx. If the x-ray picture is taken shortly after the spread of tuberculosis to new areas, it will not show the tuberculosis until the tubercles have had several weeks to develop, but this is rare in practice. Of several hundred negative sputum patients who also had negative x-rays, we have known only 5 who later developed clinical tuberculosis, so that, if we count the 5 positive sputum cases at the time of the x-ray and the additional 5 patients who later became unmistakably tuberculous out of over 1000 negative sputum cases, we have only 10 out of over 3000 cases in which we know that the x-ray films failed to show tuberculosis in the lung.

A negative physical examination and a negative sputum are no safeguard against overlooking tuberculosis, but entirely negative films make the presence of active pulmonary tuberculosis extremely unlikely.

Before the days of x-ray, it was a great responsibility to tell patients with suspicious symptoms that these symptoms were almost surely not due to tuberculosis.

There are many cases in which the lung films show slight x-ray shadows which leave us in doubt as to whether or not they are tuberculous, but if the films are of good quality and found clear by experienced interpreters, the patient is free from clinical tuberculosis in the lung, about 99 times out of 100, in my experience.

If we have a series of suspicious cases in which the sputum reports are negative, what are the chances that the x-ray will find tuberculosis? Well, of course, this depends on the cases, for there are degrees of suspicion. Some cases are only slightly suspicious, say 20 per cent, while others are 80 per cent suspicious. Of the last 100 suspicious negative sputum patients sent to Wallum Lake for x-ray, in 12 or 12 per cent the x-ray films furnished evidence of tuberculosis, which was considered sufficient for diagnosis.

The x-ray is far more helpful in finding early tuberculosis in the lung and far more reliable in excluding tuberculosis in the lung, than is physical examination and it should be invariably used in doubtful cases.

MISCELLANEOUS

INTERNATIONAL HEALTH

The world grows smaller as it grows older. Transportation facilities are bringing all parts of the globe into close contact each with the other and trade today is world wide. Now London and San Francisco are in many ways nearer to each other than were Athens and Sparta in the days of their glory. There is beginning a transformation of the heterogeneous peoples of the world into one great nation, a transformation which is inevitable; cynics, chauvinists, and "nationalists" to the contrary notwithstanding.

In the van of this movement is the medical profession. Without political aspirations, with no axes to grind, the physicians of the world can progress unhampered to mutual world-wide understanding. Today progress in medicine is truly international. In one field of endeavor, however, medicine is closely linked with governments and legislation, namely, the field of public health. And now we see the nations deliberately planning and carrying out better co-operation in this field. Whatever may be one's political bias regarding his opinion of the League of Nations one cannot but approve of the work of the Health Organization. Here we see even our own country, whose non-adherence to the League has been, many believe, one of the main obstacles in the way of the establishment of a real international understanding, a full member. The headquarters of the Organization are in the Secretariat at Geneva and a far eastern station is maintained at Singapore. This latter station is of value in the early detection and reporting of epidemics which originate in the far east. The Health Section of the General Secretariat of the League keeps in constant touch with the public health authorities of all nations and is of the greatest service in the control of epidemics. There is also an Advisory Committee which sits at Paris and whose most important duty is the drafting and discussion of international agreements or conventions on health matters.

International co-operation and understanding mean peace; and lasting peace can be attained in no other way. It is a satisfaction therefore to see the medical profession playing so great a part in a movement which is of such importance to the entire human race.

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The R. I. Medico-Legal Society—Last Thursday—January, April, June and October. Roy McLoughlin, President; Dr. Jacob S. Kelley, Secretary-Treasurer.

EDITORIALS

JAMES HENRY DAVENPORT

After months of illness, endured with calm patience, Dr. James Henry Davenport died in the Jane Brown Memorial Hospital on October 15, in his sixty-seventh year. Thus passed away one of Rhode Island's most noted physicians. In the hospital to whose service and up-building he had devoted the best energies of his active career, he spent what remained to him of life and died at

last in the midst of his older colleagues who still remain and those others, his younger contemporaries, who had learned to revere him as man, physician and friend. The story of his life is not unlike that of most physicians. There is about it nothing spectacular—a chronicle of quiet, unselfish, unremitting labor on behalf of those to whom he had devoted his time and his talents. Of him, as of the goodly company he has joined, it may be said in truth, *morientes vivimus*—though dead they still live in the golden memory of the benefactions they have strewn along the pathway of the years. It is good for the physi-

cians of Rhode Island to have had for so long in their midst a man like Dr. Davenport.

Although devoting his professional efforts to a special department of surgery, Dr. Davenport found time for other interests, social, civic and literary. One of the founders of the University Club, he was its President from 1922 to 1923. He was interested in the beginnings of the Turks Head Club and did much to further the development of the Biological Department of Brown University, his Alma Mater. Even in politics he played a part, for in 1912 he was elected to the Providence City Council. He was a member of the Providence Art Club, the School of Design, the Providence Athenaeum, of which he was at one time a director. His love of books is well known and to the Library of the Rhode Island Medical Society he donated his splendid collection of the non-professional writings of physicians, a gift as generous in motive as it is symbolic of his culture. In 1910 the Providence Medical Association made him its President and he was also a member of the Massachusetts Medical Society, the Boston Medical Library, the Clinical Club, the Amos Throop and Friday Evening Medical Clubs.

These activities, however, were but the outer trappings of the man. His inner qualities, his kindliness, his urbanity, his humor, his charity, were known only to his friends and patients. Dr. Davenport belonged by taste and tradition to the small and rapidly disappearing band of medical humanists who brought to the healing art the spirit and savor of Ely and Noyes who in their day graced the medical profession in Rhode Island. It was his large and tolerant humanity which begot the devotion of his patients and the loyalty of his friends and which in the future will inscribe the name of James Henry Davenport upon the bright and honorable roll of beloved physicians.

A MEDICAL CONGRESS

As many of our readers know, the Connecticut State Medical Society has for a number of years held an annual medical congress which is designed to give an opportunity for the physicians of the state to hear important medical and surgical subjects discussed by leaders in their respective fields; also to witness clinical demonstrations and to have

round table conferences. Such a congress has each year increased in its usefulness and every year increasing numbers of physicians from all over New England have attended. Should not Rhode Island have a similar opportunity for its physicians? We believe there are many physicians not connected with hospitals who have very little opportunity for learning at first hand the many steps of progress that medicine is making each year. Should not the Rhode Island Medical Society consider holding a similar congress; perhaps, not every year, but by arrangement with other New England states such a congress might be held in different years at different large centers in the various New England states. The problems of both the city and the rural practitioner in the various New England states are quite similar, and we believe that New England should make a co-operative effort that would make the best medical thought and teaching easily available at definite periods for all those trying to advance the practice of medicine within the borders of New England. Let us consider making a co-operative medical program for New England, just as industry has tried to develop a co-operative industrial program.

RESEARCH OF EXPERIENCE

One hears too often an expression of discontent because we have no research laboratories that are highly endowed and of a rather specific and limited field. There seems to prevail the feeling that progress in medicine can only be made by sealing oneself in a laboratory and by investigating some problem involving an elementary science as, for example, chemistry.

To those qualified for such investigative work there is little to offer here. Not many physicians, however, can carry on such a study. We do have plenty of opportunities for clinical and even physiological research that are important and for which most physicians are equipped by training. Such opportunities are being passed over as we long for something that we do not have.

One of the first requisites for a clinical study is a careful and accurate history and physical examination. How many doctors take such a record? Yet with good records an office practice of a few years' duration would yield many facts that should be recorded. The clinical discovery that pernicious anemia is uncommon in pigmented

people is of inestimable value. Other problems just as important are waiting to be solved and will be if we utilize our splendid opportunities.

DOCTOR JAMES RAYMOND MORGAN
1841—1928

Doctor Morgan, one of the oldest physicians in the state, died of bronchial pneumonia at the Rhode Island Hospital, September 25; had he lived but three days longer he would have been 81.

As a committee has been appointed to prepare an *In Memoriam*, the story of his life will not be given here except to note that for nearly fifty years he was engaged in general practice in Providence, but gave special attention to Dermatology. He was for many years a visiting physician at the Rhode Island Hospital, and it was through his influence that the department of dermatology was established there.

By his will \$15,000 is left to the hospital.

Very impressive funeral services were held at the Beneficent Congregational Church, of which Doctor Morgan was a member. A goodly representation of his fellow-members of the Medical Society, nearly all of whom had been associated with him in work at the Rhode Island Hospital, attended the exercises.

Thus by their presence Doctors Harlan P. Abbott, Frank P. Capron, R. H. Carver, Frank T. Fulton, Margaret S. Hardman, Arthur H. Harrington, Edwin B. Harvey, John W. Keefe, Eugenie P. King, Lucius C. Kingman, Charles H. Leonard, George S. Mathews, John F. McCusker, Jesse E. Mowry, Walter L. Munro, John M. Peters, Vito L. Raia, Louisa Paine Tingley, Stephen A. Welch and William R. White, in an impressive and significant manner attested their respect and esteem for their veteran associate.

The burial was at Cedar Grove Cemetery, New London.

STREPTOCOCCUS MENINGITIS—
REPORT OF EIGHT CASES

H. EVERETT SMILEY, M.D.
PROVIDENCE, RHODE ISLAND

During the year 1927 there occurred in the Providence City Hospital, eight cases of acute meningitis due to a hemolytic streptococcus, all of which

proved fatal. A study of the histories of these cases showed a striking similarity in the onset as well as the clinical course, in that all of the cases showed three definite stages, namely:—an acute infection, followed by a latent period, during which the patient was free from any symptoms; to be succeeded by an insidious onset of meningitis. Seven of the cases were in children, and in these the infection varied in that some were scarlet fever, some were otitis media, and others were erysipelas. The eighth case was that of an adult whose history was so sharply different from that of the seven children, that it falls into a definite class by itself.

The lesson to be learned from these case-histories, it seems to me, is that any acute infection caused by a streptococcus must be regarded as a potential case of meningitis and a guarded prognosis given accordingly. The cases should be carefully watched with a view to detecting the earliest signs of complicating meningeal symptoms. Further with any rise in temperature, repeated blood cultures should be taken, for in all probability, the infection of the meninges is hematogenous in origin rather than by direct extension. The following case reports illustrate the relationship between an acute infection and extension to the meninges.

CASE I—HOUSE No. 23819 J. N.

The patient was a four year old boy giving a history of having had "grippe" with cervical adenitis three weeks before admission, from which he apparently completely recovered. Eight days before admission to the hospital, he was suddenly seized with chills and fever which persisted. Three days before admission, he complained of a stiff neck. He was seen by a local doctor who gave him anti-meningococcus serum and referred him into the hospital. Physical examination showed stiffness of the neck with positive Kernig and Brudzinski signs. A lumbar puncture showed cloudy fluid under slight pressure with 792 cells per cubic m.m. most of which were polynuclears, and a strongly positive globulin test. Because direct smears showed no organisms, anti-meningococcus serum was given. A culture of the spinal fluid showed streptococcus hemolyticus. Two days after admission the patient died and on autopsy showed marked thickening of the pia-arachnoid membrane with cloudiness of the ventricular fluid.

Direct smears from the pus about the base of the brain showed streptococci. Cultures from the spleen and spinal fluid showed the presence of streptococcus hemolyticus.

CASE II—HOUSE No. 23912 G. P.

The patient was a boy of seven years, giving a history of a discharging ear, which three weeks before admission "opened by itself," after hot applications. After a week the discharge stopped. During the three weeks preceding admission the child had a fever. He was sent to the hospital with a probable diagnosis of pneumococcus meningitis. Examination on admission showed the right ear drum to be red and bulging, and the eye grounds showed an optic neuritis. The patient had a stiff neck and showed a positive Kernig and Brudzinski sign. A lumbar puncture showed cloudy fluid, polynuclear leukocytes and no organisms. Anti-meningococcus serum was given. The spinal fluid was inoculated into a mouse and cultured in broth and on blood agar. All the cultures proved sterile and the mouse survived the inoculation. On the fourth day after admission cultures from the spinal fluid showed hemolytic streptococci, and a week later the child died. Autopsy showed a very heavy exudate covering both sides of the brain. Cultures from the right middle ear and from the subarachnoid pus at the base of the brain showed the presence of a non-hemolytic streptococcus while cultures from the ventricular fluid showed the presence of a hemolytic streptococcus. It is apparent in this case that there was a double infection.

CASE III—HOSPITAL No. 24211 A. A.

The patient was a boy of six years with a history of scarlet fever four weeks before admission, with desquamation two weeks later, at which time he appeared well. One week before admission he complained of earache and swollen glands in the neck. The ear drum ruptured "of itself" and the ear continued to run. The patient's only complaint was headache. On admission the patient showed only slight tenderness over the right mastoid. A mastoidectomy was done. A lumbar puncture done on the day of admission proved sterile as did also a blood culture the day after admission. On the third day after admission a lumbar puncture showed cloudy fluid with a cell count of 1,968 cells most of which were polynuclear. The following day (four days after admission) the patient died. Autopsy showed a very extensive fibrino-purulent ex-

udate covering the base of the brain. Cultures from the ventricular fluid and from the heart's blood showed streptococcus hemolyticus. Examination of the right middle ear proved negative.

CASE IV—HOSPITAL No. 24271 E. P.

The patient was a boy of four years. Two days before admission the father of the patient noted that the child did not play normally and that on the boy's face there was a red area extending from the nose to the ear which was apparently spreading. The patient was sent to the hospital with a diagnosis of facial erysipelas. Physical examination showed hypertrophied tonsils and adenoids in addition to the rash. He was given convalescent erysipelas serum and apparently recovered from the erysipelas. Ten days after admission the patient showed an unexplained rise in temperature which was thought to be due to a throat condition or to cervical adenitis. Two weeks later the rise in temperature still persisted and remained unexplained. Examination of his chest, ears and urinary tract proved negative. A blood culture was taken and proved sterile. Because the tonsils were enlarged, tonsillectomy was done, thinking that this might be the cause of the temperature. The day after the operation the temperature was still elevated and a blood culture which had been sterile the day previous, now showed hemolytic streptococci (after 48 hours incubation). Four days later or 28 days after admission the patient began to show signs of meningeal irritation. A lumbar puncture was done and showed the spinal fluid to be under pressure and cloudy. Direct smears showed polynuclear cells and streptococci which on subsequent culture proved to be hemolytic. Two days later the patient died, and autopsy showed a thick purulent exudate covering the brain which was practically a membrane. The ventricular fluid was very cloudy and threw down a heavy sediment of pus cells on standing. Cultures of the ventricular fluid and also of the blood showed hemolytic streptococcus.

CASE V—HOSPITAL No. 24431 J. W.

The patient was a female child of two months. The past history was negative except for a discharging ear one month before admission which lasted for ten days and then apparently "cleared up." The day before admission the patient complained of fever and vomiting, which however was not projectile. On admission the right ear drum could not be seen. A lumbar puncture showed a

cloudy fluid with 970 cells, which direct smear showed to be polynuclear leukocytes with streptococci. Anti-streptococcus serum was given intraspinally. Lumbar punctures were done on successive days, but the fluid continued to get thicker. Four days after admission the patient died, and autopsy showed a large pocket of pus in the middle fossa. Both middle ears showed increase in serum and pus. The brain was extremely soggy and was infiltrated throughout, with pus which was especially prevalent in all the cavities of the brain. Cultures taken from the ventricular fluid and from the blood and spleen all showed the presence of hemolytic streptococci.

CASE VI—HOSPITAL No. 24506 P. H.

The patient was a female child of four years. One brother died of scarlet fever at home about one week before the patient was admitted, and another brother was convalescing during the onset of the patient's illness. Two weeks before admission the patient complained of sore throat, vomiting, fever and a "running nose," followed the next day by a rash which appeared first on the chest and then spread rapidly over the whole body. On the day before admission the patient complained of pain in the left ear. Both ear drums were lanced, liberating pus from the left ear and serum from the right ear. On admission, examination showed discharging ears, the left being worse than the right with probable involvement of both mastoids. Three days after admission a bilateral mastoidectomy was done. Cultures from the ears showed streptococcus hemolyticus. Following the operation the temperature dropped and the patient seemed to improve. Two days after the operation the blood culture proved sterile. Both mastoids drained for over a month when on the 43rd day after operation the patient appeared to be very listless. The following day the temperature rose to 101°. Examination showed a mucoid discharge from the left ear. The right ear was dry, the post auricular wounds were clean. A blood culture, taken the next day, proved sterile. The following day a lumbar puncture was done and showed opalescent fluid under diminished pressure. The child appeared very drowsy and showed a stiff neck with positive Brudzinski signs. Anti-streptococcus serum was given intraspinally. A culture from the spinal fluid showed hemolytic streptococci. The patient daily became worse and successive lumbar punctures yielded more and more

cloudy fluid. Anti-streptococcus serum was given both intramuscularly and intraspinally, but the patient died. No autopsy was obtained.

CASE VII—HOSPITAL No. 24678 G. M.

The patient was a male infant of two months, that before admission had been circumcised. Four days after the operation there was a marked local induration at the site of operation and six days later there was a diffuse inflammation of the skin extending to both thighs. The patient was admitted with a diagnosis of erysipelas and convalescent serum was given. The following day the temperature still remained high and a blood culture showed the presence of hemolytic streptococci. The inflammation of the skin continued to spread and a second blood culture also showed the presence of hemolytic streptococci. A lumbar puncture was done which yielded a clear fluid which proved sterile on culture. More convalescent erysipelas serum was given but the patient rapidly became worse and six days after admission died. At autopsy cultures from all the organs of the body as well as the brain and the blood stream showed hemolytic streptococci. Spinal fluid obtained post-mortem was cloudy and direct smear showed chains of streptococci, which on culture proved to be hemolytic. There was also a general peritonitis due to the same organism.

CASE VIII—HOSPITAL No. 24295 A. M.

This patient was a female adult aged 29 with a history of discharging sinuses in the head for a period of ten years. Her history otherwise was negative. Two weeks before admission the patient complained of headache and pain in the neck and spine. The neck was rigid and she frequently vomited after meals. Examination of the eyegrounds showed bilateral secondary optic atrophy. The blood vessels were tortuous, but there were no hemorrhages. The left ear was discharging. There was a discharging sinus in the back of the occiput and the scalp around the sinus was boggy. There was another deeper discharging sinus just posterior to the left mastoid. A lumbar puncture showed the spinal fluid to be under slight pressure and slightly cloudy. There were 218 cells per cubic m.m. most of which were polynuclear. Direct smear of the sediment showed an assorted flora but no predominant type of organism. Culture proved sterile. Anti-meningococcus serum was given intraspinally.

ly. Two days after admission a second lumbar puncture was done, yielding a fluid similar to the first, culture of which was also sterile. Examination for tubercle bacilli proved negative. More anti-meningococcus serum was given. On the third and fourth days respectively the patient seemed to improve and more anti-meningococcus serum was given. On the fifth day there was a profuse discharge from both sinuses. Because of the long duration of the disease with negative smears and cultures it was suspected that the case was tuberculous meningitis. The patient complained only of pain in the legs and along the spine and at times appeared disoriented. Twenty-seven days after admission the patient died.

Autopsy showed a markedly thickened calvarium, on the under side of which and corresponding to a similar area on the outside of the dura, was a fibrino-purulent exudate, about $3\frac{1}{2}$ inches in diameter. Direct smears from this pus showed the presence of streptococci. The dura in this area was thickened, the rest of the dura being of normal appearance. It was apparent that the pus from this area drained through the sinus posterior to the mastoid. The superior surface of the brain showed little that was abnormal. Examination of the base of the brain however showed adhesions tying down both poles of the temporal lobes. Part of the base of the brain involving the pituitary showed necrotic softening. Smears and cultures from the pus at the base of the brain and from the circular sinus about the sphenoid bone showed hemolytic streptococci.

An explanation of the above case is probably that the patient had a chronic extradural abscess communicating with the outside through the sinus in the skull. Two weeks before admission this pus had extended beneath the dura and set up an acute inflammation of the meninges.

THERAPEUTIC PNEUMOTHORAX*

By JOSEPH ROSENBLATT, M.D.

WALLUM LAKE, R. I.

Induced pneumothorax as a therapeutic measure for pulmonary tuberculosis has been practically universally established for many years. My

only excuse for presenting this subject at present is because, due to the fact that the majority of general hospitals refuse to treat pulmonary tuberculosis, the practice of pneumothorax is practically limited to tuberculosis institutions and resorts, and to a few specialists in tuberculosis, and the majority of physicians rarely have an opportunity to familiarize themselves with this procedure.

This treatment will save life and restore to working capacity some patients in whom the prognosis is otherwise hopeless, and in some it is a palliative measure to prolong life. Unfortunately, however, the number of cases suitable for this treatment is relatively small.

The classical indication for pneumothorax treatment is a one-sided lesion in a patient who is not doing well under the routine rest and fresh air treatment. But a case with a limited lesion on one side and an extensive and progressive lesion on the other side, may be considered a suitable case for treatment on the worse side. Pneumothorax may be indicated as an emergency measure in bilateral cases with severe hemoptysis, when it is known from which side the blood is coming. The best results are obtained in patients with moderate lesions on one side without extensive cavities and with only moderate activity. These patients have considerable resistance to the disease, but not enough to overcome it without assistance which is rendered by this treatment. Cases with very severe toxemia usually do not get much benefit, but occasionally a spectacular case may be seen. We treated some cases with acute pneumonic tuberculosis, but the treatment was ineffective.

The percentage of cases suitable for treatment would depend upon the type of cases admitted to the institution and how conservative or radical the physicians are in selecting their cases. At Loomis Sanatorium¹, where they admit patients in all stages, but only those who have some chance for improvement, they report from 10 to 15% of all cases suitable for this treatment. At Wallum Lake we treated about $4\frac{1}{2}$ % of the cases admitted, but we admit many cases who are entirely hopeless, some cases of non-pulmonary tuberculosis, and a number of children who hardly ever have a lesion suitable for such treatment.

*Read at the quarterly meeting of the Rhode Island Medical Society, at the State Sanatorium, Wallum Lake, R. I., Sept. 6, 1928.

The principle upon which this treatment is based, is local rest of the diseased lung. Air is introduced between the parietal and visceral pleura, which acts as a splint for the diseased organ, and at the same times compresses cavities and promotes fibrosis and healing. As the air is absorbed through the pleural lymphatics, frequent refills are required. The amount of air introduced and the frequency of the refills are controlled by the intrapleural pressure as observed on the water manometer, which is an essential part of the pneumothorax apparatus, and by frequent fluoroscopic examinations showing the amount of collapse obtained. In the average case 500 to 600 cc. of air is injected at each operation, and refills are done twice a week for the first two weeks, once a week for about two months, and every two weeks after that.

There is some difference of opinion as to how much collapse of the lung is desired. J. B. Murphy², who was the first to induce pneumothorax in this country, advocated an absolutely complete and prompt collapse of the entire lung. Barlow and Kramer³, on the other hand, advocate the so-called "selective collapse," which consists of introducing very small amounts of air with the idea of collapsing the diseased part of the lung only. In our practice, we find that a moderate collapse is always necessary, but the outcome depends mostly on whether or not the diseased part of the lung is collapsed.

The length of time that the treatment is to be continued, depends on the extent and severity of the lesion, and upon the development of complications. In a moderate case without large cavities, treatment for about two years is, to my mind, sufficient. Some cases may have to be continued much longer, and sometimes indefinitely.

The most common cause of failure in this treatment is adhesions between the parietal and visceral pleura. In some cases, the entire pleural cavity is obliterated by adhesions, so that no air can be introduced. Sometimes the pleural space is only partly obliterated and a partial pneumothorax can be induced, but the diseased part of the lung remains either uncollapsed or partly collapsed, thus rendering the treatment ineffective or only partly effective.

The technique of the treatment is very simple and does not require any unusual skill. The dangers incident to the operation itself are few, and,

with good care they are practically negligible, though some fatalities have been reported. The cause of a fatal accident is usually an air embolus introduced into a pulmonary vein. As the pulmonary veins empty directly into the left side of the heart, and from there the blood is carried directly into the brain vessels without passing a capillary bed, the embolus is easily carried into the brain. Some workers claim that patients may go into collapse on account of so-called pleural shock, but this has not been proven. I have never seen any serious accident. We had two or three cases who collapsed during the first treatment but promptly recovered. Accidents can be avoided by making the puncture over the healthy portion of the lung and not introducing any air until a marked negative pressure is observed on the water monometer.

The most common complication occurring during the course of this treatment is pleural effusion. It occurs in about 75% of cases, but it is not a serious complication, though it causes temporary acute symptoms. Some patients do better after the fluid accumulates, either because the effusion is the result of the breaking of adhesions, so that a better collapse is obtained at the time the fluid develops, or because the effusion causes fibrosis of the visceral pleura, which shrinks and causes further collapse of the lung and coaptation of cavities. A purulent effusion is somewhat more serious. In the vast majority of cases it is purely tuberculous and contains tubercle bacilli. But with proper treatment, the outcome in many cases of purulent effusion is favorable, though convalescence is prolonged. A very serious complication is a rupture of the lung, causing a spontaneous pneumothorax to superimpose upon the artificial. The outcome is usually fatal, though we have cases that recovered from this complication. An acute infection of the pleural cavity with pyogenic organisms is a grave complication but with ordinary care it rarely occurs except in conjunction with a spontaneous pneumothorax.

The results obtained would depend upon the type of cases selected for treatment. If many early and slightly active cases are selected, as is the practice in some institutions, good results are to be expected, but many such patients would recover without treatment. On the other hand, if the treatment is done only as a last resort, failure

in a large percentage of cases is inevitable. Most of our patients had far advanced disease and were definitely failing in spite of a period of rest in bed. In quite a number of cases the treatment was done as a last resort in an attempt to check hemoptysis or for a possible chance of improvement.

The first 17 cases treated in Wallum Lake were reported by Dr. Barnes and Dr. Fulton in 1913⁴. The first case treated is now well and working, another patient of this group is at present employed in the Santatorium, and a third of the group worked for many years as a nurse in the Sanatorium but is unable to work at present on account of heart disease and bronchitis.

The total number of cases treated in Wallum Lake to date is 189. This includes all cases who had even a small, inadequate amount of air injected into the pleural space, but does not include those in whom the attempt failed entirely. For the purpose of considering the results, I thought it advisable to exclude those cases whose treatment began less than one year ago. The number of cases to be so considered is 160. Of these, 29 or 18% have recovered sufficiently to return to work, and 24 or 15% are working at present. Fifteen or 9% of the cases showed marked improvement lasting more than one year, but are unable to work. Eleven of these 15 cases are still under treatment and doing well, and it is hoped that most of them will be able to return to work. Forty-two patients, or 26% of the 160 cases considered, showed temporary improvement lasting from several months to one year, but relapsed later, most of them on account of a lesion in the other lung and several on account of pyopneumothorax or extra pulmonary complications, such as enteritis, laryngitis, etc. Seventy-four patients, or 46% of the 160 cases, failed to improve. In about one-half of these cases the collapse was inadequate. In some of them only about 100 cc. of air could be introduced, and the treatment was given up after a few trials.

Three cases of acute pneumonic tuberculosis failed to respond to the treatment. In the remainder of the cases, the failure was due to rapid development of a lesion on the other side or to non-pulmonary complications.

The total number of cases benefited by the treatment either temporarily or permanently is

86 or 54%. The number that derived no benefit is 74 or 46%.

These figures do not sound impressive, but recalling that the outlook without treatment was bad in all the cases, we ought to be satisfied with whatever gain we made.

REFERENCES.

- ¹Amberson & Peters. Lilienthal's Thoracic Surgery, Vol. 2, P. 342.
- ²Interstate Med. Journal, March 1914, Vol. 21, P. 226.
- ³Amer. Rev. of Tuberculosis, 1922, Vol. 6, P. 75.
- ⁴Boston Med. & Surgical Journal, Vol. 168, P. 917.

SOCIETIES

PROVIDENCE MEDICAL ASSOCIATION (Providence District Society)

The regular monthly meeting of the Providence Medical Association was held at the Medical Library, 106 Francis Street, Monday evening, October 1, 1928, at 8:45 o'clock.

Program: 1. Retinitis of Pregnancy, Dr. James W. Leech. 2. Sterile Marriages and the Medical Problems They Present, Dr. Ira H. Noyes.

The Standing Committee approved the applications for membership of the following: Rocco Abbate, John Irving Pinckney, Angelo Scorpio.

DR. PETER PINEO CHASE, *Secretary*.

HOSPITALS

THE MEMORIAL HOSPITAL STAFF

OCTOBER 4TH, 1928

The meeting was preceded by a demonstration of spinal anaesthesia by Dr. Meyer Saklad on a case of acute appendicitis.

The meeting, in the Nurses' Home Auditorium, was called to order by President Wheaton at 9:45 P. M. who appointed Dr. C. H. Jameson Secretary *pro tem*. There were fifteen members present. Minutes of the last meeting read and approved.

The speaker of the evening was Dr. Meyer Saklad who discussed the modern application of spinal anaesthesia by instructive diagrams and review of cases.

Discussion was opened by Dr. A. H. Miller and continued by Drs. A. T. Jones, J. E. Kerney and C. H. Holt. Dr. Holt reported that excellent

anaesthesia was obtained on the case to which spinal anaesthesia was given. The patient experienced no discomfort, remaining in excellent condition throughout.

Dr. J. E. Kerney reported an interesting case of an elusive calculus impacted in the posterior urethra, requiring suprapubic cystotomy and subsequently perineal operation for removal.

Dr. A. H. Miller reports that the medical and surgical report is well under way. He strongly recommends that some standard classification of diagnosis be adopted and followed out by the staff.

Dr. J. L. Wheaton made a plea for co-operation of the staff in obtaining a higher percentage of autopsies. He also read a communication inviting the physicians to attend an Institute on November 8th and 9th under the auspices of the Rhode Island League of Nursing Education.

Meeting adjourned at 10:50 P. M.

C. HAROLD JAMESON, M.D.

Secretary pro tem

BOOK REVIEW

MODERN METHODS OF TREATMENT (Glendening),
C. V. Mosby Company, Publishers, (2nd Edition.)

Is an excellent book particularly for the practitioner. The book is printed on good paper and well bound. It is comprehensive. The subjects are lengthily described and the most recently accepted methods of treatment are included.

In addition to outlining treatment of diseases of the various systems of the body the book contains chapters on many other subjects as dietetics, hydrotherapy, infectious diseases, diseases of metabolism and diseases of the ductless glands. It is a good book to own and to read.

MISCELLANEOUS

IRRADIATION AND THE BLOOD

The enthusiasms that have been aroused by the demonstrable physiologic potency of irradiation with ultraviolet rays generated in various ways call for restraint before they are permitted to

promote therapeutic procedures that may presently be discovered to be ill advised. It is better that disappointments should precede rather than follow their use. Irradiation cannot be rationally employed until its possible effects on the organism are thoroughly investigated in many directions. The antirachitic effects of exposure to ultra violet rays are so striking and easy of demonstration that there has been a tendency to expect only beneficial results from irradiation, regardless of intensity and "dosage."

Some of the effects on the blood and circulation have already been determined with sufficient accuracy to justify the proposed precautions. Not long ago it was shown by Miles and Laurens¹ that the exposure of dogs to carbon arc radiation may give rise to variable results with respect to the changes in the content of erythrocytes in the blood. Depending on the dosage, increases and decreases were noted. Their results were interpreted, however, to indicate a stimulation of the hematopoietic system. A continuation of the study, by Mayerson and Laurens², shows that changes in the plasma volume also may take place. For example, the primary result of an individual exposure was a temporary increase in the plasma with recovery to normal within a few hours. This dilution of the blood occurred again but was not augmented by further exposures, its duration being determined by the strength of dosage and the interval between successive exposures. After massive exposures a slight concentration followed the initial dilution. Repeated exposures stimulated the hematopoietic organs to produce an increased number of red cells that persisted for several weeks after the last irradiation. However, indexes of color, volume and saturation showed that the red cells in the period after irradiation are usually smaller and less saturated than before the treatment. Furthermore a progressive leukopenia may develop.

These are phenomena that must be evaluated with some caution. Mayerson and Laurens assert that erythrocytes may actually be destroyed by excessive irradiation with massive exposures. Such destruction is surely not a therapeutic desideratum. These investigators, who have had large experience in this field, believe that many of the conflicting results reported are without question due to the variation in the intensity and character of the radiation, the specifications of

which are rarely given. However, as radiation does act as a hematopoietic stimulus to the normal relatively stable organism, Mayerson and Laurens regard it as plausible at least that it would be particularly efficient in effecting regeneration in anemic conditions. The persisting uncertainty should act as a warning against undue ventures that may actually border on quackery, until further explicit knowledge is available.—*Jour. A. M. A.*, Oct. 6, 1928.

¹Miles, A. L., and Laurens, H.: *Am. J. Physiol.* 75:462 (Jan.) 1926.

²Mayerson, H. E., and Laurens, H.: *The Effects of Carbon Arc Radiation on the Blood of Dogs*, *Am. J. Physiol.* 86:1 (Aug.) 1928.

ACUTE PERFORATIONS OF STOMACH AND DUODENUM

In preparation for the operation, C. L. Gibson, New York (*Journal A. M. A.*, Oct. 6, 1928), suggests that patients should be given a little methylene blue (methylthionine chloride, U. S. P.) solution, as it aids in recognizing the perforation quickly. The peritoneum should be opened in a puddle of water so that the presence of gas may be detected. The perforations are practically always juxtapyloric, so that region is at once sought for and the perforation easily identified with the aid of methylene blue. Closure is best effected by means of two layers of interrupted chromicized catgut sutures applied on the Heineke-Mikulicz principle, constriction of the viscus being avoided. All fluid should be thoroughly removed. The sucker is particularly useful. Drainage is generally useless and is certainly not required in early cases, 65 per cent of which are sterile. If the suture line is not entirely satisfactory it may be covered over with some peritoneal surface, such as a flap of omentum or the round ligament, which can be dissected off for easy approximation. It is not his policy to do any more as a routine than to close the perforation, leaving subsequent events to be dealt with more intelligently and more satisfactorily at a later operation. Of course, if very obvious stenosis is present, it is wisest to add a gastro-enterostomy to the primary operation. Certain large indurated

ulcers cannot be closed by any form of suture and will require a pylorotomy. The criterion of location is the pyloric vein. Sometimes the ulcer seems to be situated right at the vein; in such cases the lesion has been classified according to the situation of the bulk of the ulcer. Duodenal ulcers give a longer history, severer symptoms and higher mortality. Gibson says that in general, patients who recover from a perforation are cured of the ulcer. The great majority are restored to good health and are free from stomach symptoms. Of the ninety-five living patients who were due to return for follow-up examination, he has reports on ninety-three, or 97.9 per cent. Nineteen patients (15.4 per cent) required a second operation and two had a second perforation. The total operative mortality in 123 cases was 18.6 per cent, twenty-three deaths. The causes of death were: peritonitis (fifteen), empyema, consequences of psychosis, collapse after getting out of bed, cardiac failure, anesthesia, subdiaphragmatic abscess and pulmonary embolism.

RECOVERY OF HUMAN OVA FROM UTERINE TUBES

Relatively little is known of the human ovum from just before the time of ovulation until after the time of implantation of the developing embryo in the uterus. Consequently the time of ovulation in the menstrual cycle in woman has been computed chiefly from the condition of the corpus luteum rather than from the finding of ova in the tubes. In an attempt to fill partly this gap in our knowledge of early human embryology, a co-operative investigation was planned by Edgar Allen, J. P. Pratt, Q. U. Newell and Leland Bland (*Journal A. M. A.*, Oct. 6, 1928), with the following objectives: (1) the recovery of ova from the uterine tubes; (2) the correlation of their condition with the menstrual history and the stage of development of the early corpora lutea (recently ruptured follicles) from which these ova had been extruded, and (3) a continuance of quantitative analyses of the amount of ovarian hormone in tissues of the human ovary. This report records the recovery of seven ova from the uterine tubes, among them one set of

twins and one case of internal migration of an ovum from one ovary to the other tube. Of more than forty operations on patients from whom material was obtained for this study, twenty-six were dated between the twelfth and the sixteenth days of the menstrual cycle, the others ranged from the first to the twenty-fifth days. While in the majority of cases recent corpora lutea could be found to account for ovulation, in one or two cases the evidence clearly points to absence of ovulation in the last several cycles. This condition, menstruation without ovulation, so common in the monkey, must be recognized as occurring in woman.

COUNCIL ON PHYSICAL THERAPY

A. U. Desjardins, Rochester, Minn. (*Journal A. M. A.*, Oct. 6, 1928), gives a short history of the organization of the council on physical therapy and discusses its scope and activities. One of the most important questions which the Council has had to consider has been the neglect of medical schools to provide adequate courses in physical therapy for medical undergraduates and graduates. Perhaps the most significant factor in preventing physical therapy from being raised to the same scientific level as other branches of medicine has been the attitude of some of the very leaders of the medical profession, who, having themselves failed to learn anything about the possible therapeutic value of physical methods of treatment, have nevertheless done everything possible to obstruct its progress. The general failure of physicians to familiarize themselves with massage and corrective exercises has given rise to several additional cults, the rapid growth of which the medical profession has foolishly tried to combat by legislative means. The only logical way of dealing with this problem is to bring physical therapy into the sanctuaries of medicine, test its therapeutic possibilities with scientific thoroughness, adopt those methods which prove sound, and teach them to the profession. Unfortunately, the present dearth of teachers cannot be overcome in a short time, and it cannot be overcome at all until far-sighted policies are adopted whereby not only adequate instruction may be provided but the field of physical therapy

may be made attractive as a specialty, and able young physicians drawn into it. In the meantime, the physicians of the country require and demand short courses of postgraduate instruction by which they may acquire the essentials of physical therapy that will enable them to treat their patients with benefit and without danger. Some institutions have already organized courses in physical therapy, while others are ready to do so as soon as it appears clear how and how much physical therapy should be taught, and as soon as qualified teachers can be found. In this direction the Council must perforce proceed slowly to avoid blunders. The question next in importance before the Council was the formulation of a code of rules to govern the submission, consideration, acceptance or rejection of devices or methods submitted by manufacturers and others. For the time being the Council has decided to limit its activities in this direction to the formulation of adequate standards of construction and operating efficiency, and the manufacturer who desires to secure for his apparatus the approval of the Council must furnish evidence to substantiate the claims advanced by him in favor of the device or apparatus submitted. Acceptance by the Council of any product of a manufacturer constitutes a valuable asset, and an increasing number of such products are being submitted for consideration by the Council. The Council has undertaken the thankless task of reviewing this literature and of preparing a nomenclature in harmony with science. For all practical purposes, physical therapy rests largely on empiric evidence, and the opportunities for experimentation are unlimited. The number of questions being brought to the attention of the Council is increasing steadily. One question which is now being considered is the rental of radium to physicians by companies controlling the supply of this valuable substance. The best results from radium can be obtained only by experts skilled in the recognition and treatment of the diseases for which the use of radium is indicated. The therapeutic use of radium by general practitioners, dermatologists, surgeons or others without special training in radium therapy constitutes a public danger. Hence, the indiscriminate rental of radium to physicians is an unsound and pernicious practice, and it is time the collective professional conscience should put a stop to it.

DIPHTHERIA PROPHYLAXIS IN FRANCE

Although a preparation has been obtained for human vaccination against diphtheria, a point that is not very well known is the antigen value of such a mixture; therefore, when this preparation is injected for vaccination, the immunizing effect produced is not known. Of course, certain experiments could be made in animals to discover the value of immunization, but this would require a great number of animals over a large period of time, and what can be easily done experimentally becomes impossible for practical purposes. Toxin-antitoxin is very slow in producing immunity. According to American authors, it is only after three or six months that immunity should be tested by the Schick reaction. This delay prevents the use of toxin-antitoxin during an epidemic. G. Ramon and G. Illingworth Helie, Paris, France (*Jour. A. M. A.*, Oct. 6, 1928), think it easy to understand that, in the face of all these difficulties, disadvantages and imperfections, the spreading of this method in many countries is seriously retarded. It is also the reason why in France they have not been tempted to employ the toxin-antitoxin mixtures which have been in use in Germany and in the United States since 1913. Anatoxin may be obtained by the action on the toxin of different physical or chemical bodies. One of the most practical methods of converting diphtheric toxin into anatoxin is by means of the combined action of formaldehyde and prolonged heat. For anatoxin to be considered a product obtained from the transformation of toxin, it must have an intrinsic antigen value which can be measured by its flocculence. It shows a very stable antigenic power, confirmed both in vitro (by flocculation) and in vivo. Some specimens of anatoxin made five years ago have retained their antigen value. Diphtheria anatoxin is equally steady in its innocuousness. Certain quantities of anatoxin kept over a period of several years in different conditions did not show any traces of toxicity. The authors discuss preliminary experiments in vaccination with diphtheric anatoxin; practical experiments with vaccination by anatoxin; reactions to anatoxin; re-

sults of vaccination by anatoxin as verified by Schick test; results of vaccination by anatoxin in contaminated areas during an epidemic, and directions for the use of vaccination by anatoxin.

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From a paper read before the Southport Division of the British Medical Assn., March 30, 1928. (British Med. Jour., July 14, 1928)



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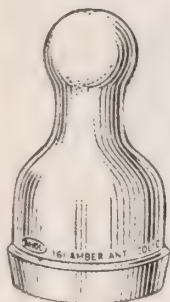
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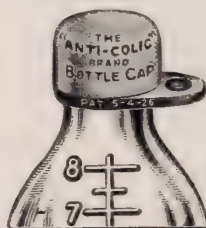
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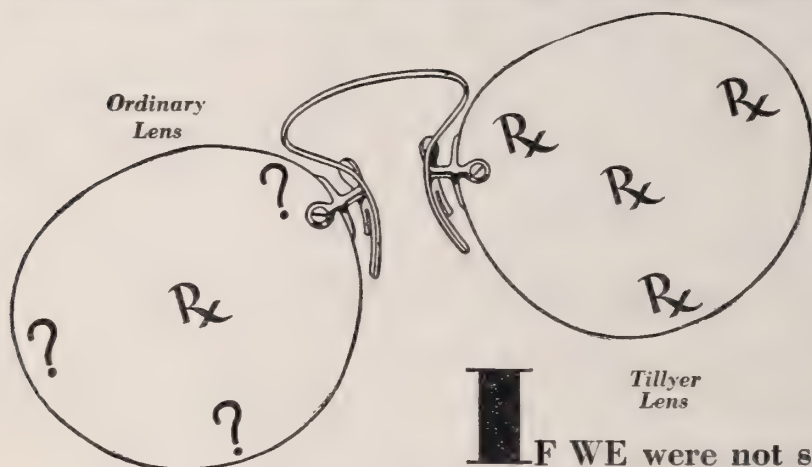
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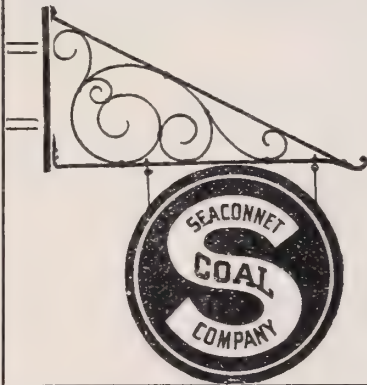
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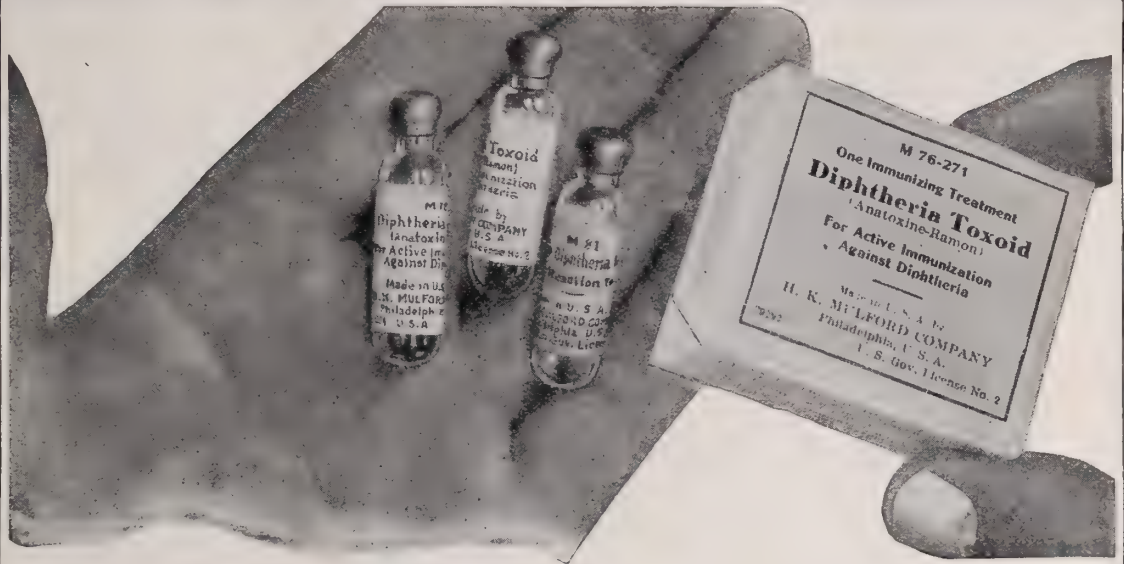
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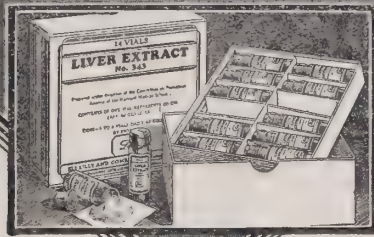
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ORIGINAL ARTICLES

STERILE MARRIAGES AND THE PROBLEMS THEY PRESENT.*

I. H. NOYES, M. D., F. A. C. S.

PROVIDENCE, R. I.

Many women who consult a physician because of sterility expect to be told definitely at the first visit why they have not conceived and whether conception will be possible. Also there is a widespread belief among them that uterine displacement is the most frequent cause of sterility.

Let us consider the subject briefly this evening from a somewhat broader viewpoint than that of the average patient, checking up, as it were, on the knowledge we possess, and see how complicated some of the problems involved may become.

In the first place it is of interest to know what proportion of marriages which might naturally be expected to result in offspring are unfruitful. Accurate information of this character is obviously difficult to obtain but, according to the most reliable data available, it is about 10 per cent.

That the male may be at fault seems to have made little impression upon the laity and many women submit to operation, though usually of a minor nature, before any examination of their husbands has been made, although it is generally conceded by investigators of the subject that a very considerable percentage of men are found to be temporarily or permanently incapacitated for reproduction. Recognition of this fact calls for a proper examination of the husband before any detailed study of the wife is carried out, inasmuch as it is ordinarily easier to decide the question of fertility or sterility in the man than in the woman.

Although there are numerous instances of pregnancy occurring when the seminal fluid has

come in contact only with the external genitalia of the female, it is the generally accepted opinion that living healthy spermatozoa must usually be deposited either in the cervical canal or in close proximity thereto.

I cannot attempt to elaborate the causes or treatment of sterility in the male but hope these important points will be duly considered in discussion.

It is obvious, in so far as the female is concerned, that the genital tract must be patent from the hymenal opening to the ovary; that there must not be in the passage any secretion that kills or materially inactivates the male cells; and that mature ova must be discharged at intervals from the graafian follicles of one or both ovaries.

The vaginal secretion is usually acid, whereas the seminal fluid is mildly alkaline. It is generally stated that, as a rule, spermatozoa will not survive in the vaginal pool for more than a very few hours and, if the vaginal acidity is greatly increased, they may perish in a much shorter time. Hence the importance of their gaining quick access to the cervical canal where the secretion is again alkaline. If however, the cervix is filled with a thick tenacious mucus, the result of an infection of the endocervix, their further progress may be quickly impeded, while they become hopelessly entangled in this material and soon die.

This brings us to a consideration of the probable importance as a cause of sterility of endocervicitis which is the most frequent lesion of gonorrhea in the female. Gonorrhea is by no means the only cause of endocervicitis however. It is not infrequent in virgins and is very common after parturition, a fact which may have considerable bearing on so-called "one child" sterility. It must be admitted, though, that pregnancy occasionally occurs in a woman whose cervix looked badly infected and would have been readily accepted as a probable cause of sterility had the patient presented herself on that account. It may be that in such instances the attacking spermatozoa were unusually virile.

*Read before the Providence Medical Association, October 1, 1928.

Doubtless relatively few of the multitude of male cells contained in the seminal fluid deposited in the vagina at coition ever reach the uterine cavity, and fewer still find their way into the tubes. How long they can exist in either place is not known, though it is unlikely that they are able to impregnate the ovum after any great length of time. One authority states that they have been found motile in the tube twenty-four hours after coitus while another says that they have been found alive in the female genital tract for a period of twenty-five days!

Until quite recently the diagnosis of endometritis was very frequently made. Now the condition is considered rather uncommon except after instrumentation, or in connection with miscarriage, or following labor. Formerly, curettage was often performed on women who desired to become pregnant, and sometimes with success. I recall such a case occurring in the practice of Dr. J. H. Davenport. The patient had three abortions in the first five years of her married life, then no pregnancy for two years. She was curetted and became pregnant after two and a half months but miscarried twins at twenty-seven weeks. Three more years passed and, still desiring a child, she asked to be curetted again. Dr. Davenport finally consented in order to appease the patient who had become decidedly depressed because of her several disappointments. In four months she became pregnant, this time going to term, and was delivered normally.

Probably inflammatory disease of the endometrium plays a lesser part in preventing fertilization of the ovum than in causing early death of the embryo through faulty placentation, and endometrial curetting, which in light of present knowledge can hardly be recommended as a logical means of aiding conception, should certainly be avoided in the presence of infection of the cervix or uterine adnexa.

That malposition of the uterus and sterility have been closely associated in the minds of both the profession and the laity cannot be gainsaid and this applies in particular to retroversion and antelexion. Just how valid is the basis for this idea is difficult to determine. While it is common enough for the retroverted uterus to become pregnant, nevertheless it does not require any great stretch of the imagination to think that a cervical

os directed forward and upward, away from the seminal pool, might less readily become a receptacle for spermatozoa than when normally placed.

Regarding antelexion, it might be said that the male cell is small and can surely pass through an opening which allows the escape of menstrual fluid but, on the other hand, may it not be possible that even a slight impediment at the internal os might prove to be the deciding factor against the struggling invader already exhausted from its tedious journey through the cervical mucous?

In relation to our subject, tubal pathology must certainly be considered of utmost importance. The frequency of gonorrhea and its tendency to attack the tubes and to leave them either closed at the fimbriated end or with areas of nodular thickening in the wall, places this disease in the front rank as a cause of sterility. Neisser once stated that "it is the most potent factor in the production of involuntary race suicide and by sterilization and abortion does more to depopulate the country than does any other cause."

Until Rubin perfected a method of introducing gas into the uterine cavity as a test for tubal patency, an exploratory laparotomy was the only method of determining this point and even this was not wholly satisfactory because of the possibility of obstruction in the proximal or uterine portion of a tube through the lumen of which, due to its small size or tortuous course, even a filiform is unable to pass. This test, though not infallible, is of considerable value particularly if the gas passes readily into the peritoneal cavity, as shown by X-ray or fluoroscopic examination immediately afterwards. Obviously, if one or both tubes are patent, there is no reason for subjecting the patient to laparotomy, provided there is no other pelvic pathology.

If no gas passes through at the usual pressure, the test should be repeated one or more times at intervals of a month or two and, if consistently negative, it may be assumed, though not proven, that the tubes are closed. When this is believed to be the case, it becomes of interest to know whether the obstruction is at the end, in the isthmus or in the uterine portion for, if in either of the last two, operation offers practically nothing, whereas obstruction at the distal extremity is occasionally successfully overcome by salpingostomy. While the gas test does not give us

this information, a method has recently been devised which does.

As the urologist found the introduction of an opaque substance into the urinary tract an aid in the localization of ureteral obstruction and the neurologist found its introduction into the spinal canal an aid in the localization of cord tumor, so today the gynecologist finds its introduction into the genital tract an aid in localizing obstructing pathology in the Fallopian tube. Several fluids have been tried for this purpose, among them collargol and a solution of sodium bromide. At present one of the preparations of iodized oil, either iodopin or lipiodol is generally used. It is injected into the uterus by means of a syringe attached to a canula similar to the one used when injecting carbon-dioxide gas in doing the Rubin test. From 5 to 10 c.c. are injected and an X-ray taken. A second X-ray is usually taken a few minutes later, after removing the canula from the cervix, and a third one after 24 or 48 hours.

If the uterus and tubes are normal, the cavity of the uterus and lumina of the tubes will be clearly outlined and the film made on the following day should show some of the opaque material in the abdominal cavity outside the tube, thus demonstrating that at least one tube is patulous throughout. This method, then, may be of use both as a check against the gas test for patency and as a means of locating the point of obstruction in a non-patent tube.

While the Rubin test should be considered purely a diagnostic procedure, several instances have been recorded where women previously sterile have conceived within a few months after its use. Whether such occurrences merely happen by chance, or result from the slight dilation of the cervical canal incident to the introduction of the canula, or from kinked or partially closed tubes being forcibly straightened out or opened, I do not know. It may be found of value also in helping to keep a tube patulous after a salpingostomy has been created. I have already inferred, but believe I should further emphasize the fact, that pregnancy following this operation is rare. More often than not the tube again becomes closed and pregnancy does not supervene. I think a patient has the right to know this before she subjects herself to a procedure not entirely free from danger.

Having generalized somewhat on the subject of sterility and a few of the abnormal conditions which may play a part in its cause, let us return to a more detailed consideration of an individual case, as presented to us in the form of a patient in our office seeking information and relief. How shall we attack a problem which may prove so obscure as to tax our knowledge and resourcefulness to the uttermost?

As in practically all other cases for diagnosis, and it is especially true here, we should strive to learn everything possible regarding the health and habits of our patient. Therefore a full and painstaking history, the acquirement of which calls for both patience and tact, must be obtained. Questions relating to the sexual life of the patient cannot be omitted, as the information which they furnish may have an important bearing on the case. Likewise a thoroughly complete physical examination is in order, because an individual's fertility rate may perhaps be temporarily lowered by some pathological state not directly connected with the reproductive organs. Naturally the pelvis will receive particular notice, attention being directed to a search for any congenital or developmental abnormality of hymen vagina or cervix, unusual discharges, and evidence of inflammation or infection. The depth of the vagina, especially with a view to the probable ability of the posterior fornix to retain the seminal pool; the direction in which the cervix points; together with its size, shape and consistency; and the anatomical characteristics of the external os are details to be observed. The bimanual completes the pelvic examination and by means of it can usually be obtained definite information concerning the size, position and mobility of the uterus, and the condition of the adnexa and parametrial tissues.

It is proper to make inquiries about the health and habits of the husband, though it is better to see and talk with him apart from the patient. Best of all, is that he be thoroughly examined by one competent to conduct any necessary urological investigations.

If the examination has so far failed to reveal anything which might be a key to the situation, it is my custom to arrange for a post-coital examination, or Huhner test. The patient is instructed to come to the office within one hour after intercourse and on her arrival a vaginal

speculum is introduced and some of the fluid in the seminal pool removed with a pipet, transferred to a warm glass slide and examined under the microscope. A great many spermatozoa should be visible in almost any microscopic field observed, a goodly number of which should be actively motile. It should also be noted whether those that are inactive are apparently fully developed. The presence of an excess of leucocytes, though suggestive of an inflammatory process in the male genital tract, cannot be considered proof of such unless found in a condom specimen too, as they may have originated from the vaginal secretions. If the external os is sufficiently patulous, an attempt is made to obtain a little secretion from within for examination in a similar manner, for, if active male cells are seen in the cervical mucous, it would indicate that the spermatozoa are neither weak nor the vaginal and cervical secretions abnormally destructive.

When the fluid from the seminal pool contains few or no sperm-cells or when, though more numerous, they are all or nearly all inactive, it is necessary to check up by means of an examination of a freshly obtained condom specimen, as it is possible either that very little of the seminal fluid was retained in the vagina or that the spermatozoa were quickly killed by some chemical constituent of the vaginal secretion.

The husband who, by these or other tests, is suspected of being at fault should be referred to a competent urologist for further study and possible treatment.

If the post-coital examination proves satisfactory, the Rubin test for tubal patency, by means of trans-uterine injection of carbon-dioxide gas, is made. The time chosen for this is about one week after the end of the menstrual period, when pelvic congestion is least. As has been stated, a definitely positive test is proof of the patency of at least one tube. If negative the test is repeated one or more times and, if persistently negative, may be followed by the injection of iodized oil as already described.

A good history requires only a little patience. A complete physical examination demands only that one be methodical and make use of his several senses. Laboratory tests and X-ray examinations necessitate only certain technical knowledge which can readily be acquired. While we

are dependent upon these things in the practice of our profession, because they help us to detect what we recognize as abnormal, yet they cannot tell us about life itself. Nature has not yet handed over all her secrets to science.

We have, at present, no method of determining a person's individual fertility rate, which perhaps varies at different times and under different circumstances and conditions. We talk glibly about the causes of sterility when our knowledge of just how the ovary functions is still limited and the human ovum has never been seen after its departure from the follicle. We know little concerning the effect produced on the gonads by the secretions of the other ductless glands, or just what role the vitamins and the other constituents of our food play in the drama, or toxic substances, either created within the body or introduced from without. What, if any, psychic influence may be brought to bear on a problem so complex is at least debatable.

These considerations are a few of the many which furnish material for thought and research. That investigation will continue there is no doubt, for a subject which relates so closely to the origin of life will always be sufficiently fascinating to stimulate the interest of scientific minds.

Let us not be discouraged then if we cannot always give the immediate and positive answer expected by our anxious but uncomprehending patient. It will only be required of us that we make the best use we are able of the little knowledge that we have and trust the future for more.

DISCUSSION

DR. ERIC STONE:

Dr. Noyes asked me to present in the discussion of his paper a few comments on sterility as it appears in the male. Perhaps a presentation of a few statistics will be the best means of presenting this aspect of the subject succinctly. For this purpose the cases of male sterility presenting during the year 1926 have been reviewed.

During this year 36 cases of sterility or suspected sterility were examined.

Only 4, or 11%, were entirely normal.

9, or 22%, showed no spermatozoa in the seminal fluid.

23, or 66%, showed relatively reduced fertility.

Of these 5, or 21%, showed merely a reduction in the numbers of spermatozoa produced, those present showing no deformity and normal activity.

10, or 42%, showed not only reduced numbers but also the motility was decreased to the undulatory type.

8, or 37%, showed reduction in numbers and total absence of motion.

The relation between male and female sterility in individual matings was as follows:

In only one case were the husband and wife both found normal.

In 29 of the 36 cases the wife had been examined by gynecologists.

In 17, or 58% of these the wife was normal.

In 12, or 42%, the wife showed uterine, adnexal or glandular pathology.

Where the wife was normal the male showed absolute or relative sterility in 94% of the cases.

Where the wife was herself abnormal the male showed relative or reduced fertility in 10, or 83%, of the cases.

As to the causes of the sterility in the males the following figures appeared:

13, or 40%, had had previous attacks of gonorrhea, of these 7, or 21%, of the whole series, showed active gonococcal prostatitis.

4, or 12%, showed obliteration of the lumen of both *vasa deferentia*.

6 of those who had had gonorrhea presented no evidence that the gonorrhea played any part in the sterility.

2, or 6%, showed non-venereal prostatitis.

7, or 21%, showed soft, boggy and congested prostates.

8, or 25%, showed atrophic, flabby testicles.

2, or 6%, had had bilateral orchitis in youth as a complication of mumps.

5, or 15%, had practiced intercourse or perversions to excess, i. e., more than once a day over a period of years.

2, or 6%, showed glandular deficiencies.

2, or 6%, showed general asthenia.

Results of Treatment:

Only 5, or 15%, took adequate treatment.

1. Asthenic type, atrophic and flabby testicles. Took 17 treatments. The spermatozoa changed from 130,000 per c.c.; all non-motile or showing only undulatory type of motility, to 460,000,000 per c.c., with many vibratory forms and no non-motile forms. The wife, who had stenosis and retroversion corrected by operation, became pregnant near the end of the course of treatments but miscarried at four months. Had been married four years.

2. Atrophic, flabby testicles, congested prostate. Married 5 years. Wife normal. First post-coital examination showed no spermatozoa. Had 18 treatments and the last post-coital examination showed 3,000,000 spermatozoa per c.c., mostly presenting the vibratory and the rest the undulatory type of motility. The wife became pregnant 2 months after spermatogenesis had be-

come normal and was delivered of a full term, normal baby who is now living and well.

3. Non-venereal prostatitis. Received 10 treatments during which the picture of the spermatic fluid changed from a count of 51,000,000 to 530,000,000 per c.c., and from complete non-motility to vibratory motion in 10% and undulatory in about 50%, the others still being non-motile. The patient discontinued treatment, but further care might have restored normal activity.

4. Gonorrheal prostatitis, 80% pus in the prostatic fluid at the first visit. Had premature ejaculations. Received 18 treatments during which the prostatic fluid became normal, intercourse became normal and the seminal fluid changed from a count of 3,000,000 to 18,000,000. The spermatic activity which had previously been chiefly of the undulatory type with few vibratory organisms changed to vibratory in all. This improvement augured further advance, but the patient discontinued treatment.

5. Gonorrheal prostatitis with 40% pus in the prostatic fluid. Received 10 treatments during which time the prostatic fluid improved to the extent of less than 1% pus, specifically 12 cells per h. p. f. The spermatogenesis improved from 6,000 to 118,000,000 per c. c., and their activity from complete non-motility to preponderant undulatory movement, none however showed any vibratory motility. Again further treatment bid fair to bring further improvement, but the patient discontinued treatment.

In short; treatment showed 100% improvement and brought about pregnancies in 2, or 13%, of the cases, altho in only 1 case, or 6.5%, was a living baby the result.

Conclusions:

In cases of sterile matings—

Where the wife is known to be normal the male showed relative or absolute sterility in 94% of this series.

Where the wife was herself abnormal the male showed relative or absolute sterility in 83% of this series.

In all cases of sterile matings the husband should be examined as well as the wife, even if the wife should herself show sufficient cause for the sterility.

DR. C. A. McDONALD:

Dr. Noyes, the reader of the paper has asked me to say a few words from the psycho-neurological point of view. Patients presenting a psycho-neurotic type of reaction show psycho-sexual difficulties of considerable degree. It is fair to say that 80 per cent of psycho-neurotics present such disturbances. The men complain of impotency and the women show a story of frigidity. Probably not one half of these sufferers are really impotent or frigid, as the case may be. Many

domestic difficulties arise from true and false impotency and a trained frigidity. Psycho-neurologists are concerned with the personality make-up of the individual as well as the coming together of the ovum and spermatozoa. Young men well brought up, not rarely have difficulties in potency because in their early life, out of respect for mother and sister, these boys repressed all intense feelings and thoughts of the baser type of sexual life. Young men of this sort are quite liable to be impotent with a mate of the better type. They may love their wives and yet be impotent. Many a fine fellow can function only at the level of the women of the street because he cannot focalize his sexuality of the gentler and coarser type on the same individual. This explanation in part interprets why many fine fellows go wrong, causing domestic upsets and social criticism. The influence of alcoholization is another feature opening up many points of interest on the questions of frigidity and impotency causing domestic difficulties. Some individuals are only potent with alcohol and some individuals are not potent with alcohol. After a conference with the gynecologist and the urologist, the medical psychologist takes for study the personality make-up of the individual concerned and finds, not infrequently, much data relative to domestic problems presented to the physician as sterility.

DR. JAMES A. McCANN:

Dr. Cameron and I started some of this work of periuterine insufflation at our clinic at the City Hospital in 1926 before Rubin had perfected this excellent portable machine.

The Rubin test is undoubtedly of great importance in the study of tubal patency in sterility. A positive test absolutely shows that the tubes are open. A negative test must be considered very carefully before an opinion of real non-patency is established.

May I review a few cases of infertility?

Case 1. A patient, a young married woman twenty-four years of age, presented herself with a complaint of sterility. Her uterus, tubes and ovaries were apparently normal; no endocervicitis present. The examination was negative. Her husband was forty-seven, rather slim and anemic, with no history of venereal disease. Post-coital examination of the vaginal pool showed many non-motile spermatozoa. As the female vaginal secretions were acid, a slightly alkaline douche was given (Ringer's solution). The husband was given hygienic treatment. Two other post-coital examinations were made, with the same results, dead spermatozoa. I think we are safe in saying that the male spermatozoa were far from virile. No further examinations were necessary on the female.

For various reasons, both Reynolds and Cunningham believe that 40% of infertilities are due to the male.

Case 11. A young and apparently healthy woman of about 30 years of age had a negative pelvic examination except for a rather marked ante-flexion. Post-coital examination showed many actively motile spermatozoa in the vaginal pool. An operation for stenosis of the cervix was performed—Reynolds' operation on Goff's fascia and a Pozzi on the cervix. Pregnancy followed soon afterward and was brought to a successful conclusion.

Case 111. All conditions were favorable to pregnancy, except a negative Rubin insufflation test. Believing that the tubes might show slight adhesions obstructing the ends of the Fallopian tubes, a laparotomy was advised. The tubes were perfectly normal and the operation was unnecessary. Unfortunately, this happened more than once. I believe a lipiodol test should be done before a laparotomy in all cases of negative results with a Rubin test.

Of course, cases of amenorrhea, oligo-menorrhea, obesity and endocrine disturbances are still problems of unknown menstrual irregularities. The patient may or may not become pregnant, irrespective of any effort on our parts as physicians.

DR. EDWARD S. CAMERON:

This is a big subject and one which should interest all medical men, as nearly all doctors, from the gynecologist to the general practitioner, have had some experience with sterility cases. We feel endocervitis to be one of the most common causes of sterility in the female, and comparatively one of the easiest conditions to correct.

I should like to mention a few more details regarding one of the cases spoken of by Dr. McCann, the one having the acute ante-flexion. This woman was 35 years of age, had been married 9 years, had never been pregnant. Three years after marriage she had been curetted. In 1926 a laparotomy had been advised by a Boston man well known in this line of work. Examination of husband was negative and the only positive findings in the woman, were a very sharply ante-flexed uterus and a pin hole external os. Feb. 15, 1927, the acute ante-flexion was corrected by a vaginal plastic, and a V was taken from the posterior cervical lip, which was sutured so as to leave a patulous os. This patient became pregnant 5 months later.

Concerning artificial insemination, I should like to speak of one case. Woman aged 29, married 6 years, never pregnant. She had been dilated and curetted twice. This probably the

surgical procedure most often done and least often indicated in sterility cases. The only positive finding in this case was a moderately severe endocervitis. This condition was treated, she had one or two light cauterizations at the office, and after several months the cervix was much improved. The post-coital test then showed viable spermatozoa in the vaginal pool, but those recovered from the endocervix were dead. The patient was seen at office morning of Nov. 9th, within one hour of coitus, and using as careful technique as possible, about 1.5 c.c. was drawn from vaginal pool with sterile pipette and squirted up through endocervix. This woman had a scanty two day period Nov. 11th and delivered a normal baby nine months later. Of course it is difficult to prove that pregnancy followed the insemination of Nov. 9th, in this case but it seems possible. Artificial insemination should be tried only on specially selected cases.

Men doing any of this sort of work with sterility, should use judgment and tact in advising the husband and wife, as one may precipitate matrimonial difficulties by rash statements concerning the sterility of either.

DR. J. E. KEARNEY:

While it is well known that various systemic and endocrine pathologies have much to do with the question of sterility, as well as syphilitic and tuberculous orchitis, epididymitis, vasitis, etc., and many types of seminal vesiculitis, a point of great practical importance for our consideration in this matter, and one which has much to do with failures in fecundation, is the question of obstruction in the veru montanum, posterior and anterior urethra, either from chronic inflammatory conditions, pathological growths or stricture, resulting in a delayed expulsion of semen and therefore the failure of the male to deposit semen in or near the cervix, resulting in no seminal pool, and therefore no chance of fecundation, as shown definitely by the Huhner test. I have had occasion to examine and work out many of these cases, and after such obstructions were cleared and the male passages brought back to normal, permitting a free egress of semen and the formation of a seminal pool, prompt fecundation occurred, where for many years sterility seemed inevitable.

There is no question but what the Rubin test and the iodized oil test are of the utmost value in helping us to determine the question of sterility, but is it not most important that before these tests are carried out to know first that the male in question has proper functioning organs, and besides being checked by a condom test that he also be further checked by the post-coital test of Huhner?

DR. V. J. ODDO:

Dr. Noyes' paper has been very interesting to me, and I would like to say a few words on this subject. I have seen many cases of sterility due to various diseases. However, I desire to mention the effect of syphilis upon the male. It is well known that syphilis affects various parts of the body. Syphilis affects the testicles and the prostate, and leaves the individual in a more or less serious condition. I have two cases in mind.

The first case was that of a man who had syphilis and was treated. On examination, his blood was negative. Examination of the seminal secretion showed poorly active spermatozoa. I believe that in this case, the lessened activity of the spermatozoa was due to previous action of the syphilis upon the genital organs. This patient had been married several years and his wife had never become pregnant.

In the second case, the examination of the seminal secretion showed no spermatozoa. This patient had had syphilis and had been treated. His blood examination was also negative. His wife did not conceive.

I believe that syphilis plays an important part in the life activity of the spermatozoa, primarily due to the action of the disease upon the genital organs.

I wish to state also, that it is not necessary to obtain a post-coital specimen for examination of the spermatozoa. It is possible to obtain a seminal secretion in the office for examination of the spermatozoa, by stripping the seminal vesicals. In this way, a rapid examination can be made for the spermatozoa.

DR. JACOB S. KELLEY:

Although the work done by the roentgenologist does not have a direct bearing upon the treatment of sterility, it has nevertheless some assistance he can give to clear up certain types of pathology in these cases. As between the gas and the iodized oil injections, the X-ray gives a permanent record for study whereas there is a question always unanswered, of really where the gas went. This work has been developed through much experimenting and trial at our department in the Providence City Hospital and numerous additions made whereby the work is now more easily done and there is less encumbrance of instruments in the field, thus giving greater satisfaction for observing X-ray results as such injections of iodized oils can give. The bronze instruments were changed to aluminum and with the use of the rubber stopper on the injecting canula, the injected material was made to remain in place.

Following the injection of iodized oil, the cavity of the uterus is seen in its triangular shape, the horns of the uterus and the tubes which fill

to the fimbriae. The following day the tubes are better seen and fimbriae delineated, and the day following the oil has passed into the pelvis and may or may not remain there a long or short time, sometimes a long time. In accomplishing the work, it was found that great pressure, or in fact really a slight amount of pressure, could not be used as it caused more or less pain. The patient refusing to remain still the films could not be taken or were unsatisfactory. The abnormalities can easily be seen, if they effect the uterine cavity or the tubes, as projections into the shadow of the cavity, the blocking of the tube or the difficult passage through them, and the fimbrial massing with adhesions. It would be ideal if air injection of the pelvis for mapping its contents and this type of shadow could be used together as, by such a procedure, the thickness and amount of mass of pathology could be seen while the oil shadows also could give the patency of the uterine and tubal openings and the amount of encroachment and blockage.

DR. NOYES:

There are a few points of interest which were not brought out either in the paper or in discussion. I thought someone might question the safety of introducing lipiodol into the uterus under pressure which is not measured. Bécclère of France has emphasized the importance of accurately measuring the pressure by means of a manometer connected with the syringe system. He believes that if the pressure exceeds 40 mm. of Hg. the material may be forced into the circulatory system.

The relative infrequency of pregnancy after plastic operations for opening closed tubes is a matter of importance when one is considering the advisability of operating a case. In 1925 Ritter reported 4 pregnancies in 44 patients, (9%), in whom the only possibility for its occurrence was through a tube on which a salpingostomy had been done. Only one went to term. Two had miscarriages and the third an ectopic. This corresponds very closely with the Woman's Hospital series reported by Bullard in 1919 in which there were 3 cases out of 44, (7%), where the pregnancy must have occurred through a tube which had had some form of reparative operation done upon it. Both authors agree that the poorest results are in those cases where the tubal pathology is due to gonorrheal infection.

In connection with the relation between hypothyroidism and sterility, a case reported by Litzenberg in 1926 is of interest. The patient had failed to become pregnant after a dilatation for antelexion, and treatment with ovarian extracts on account of irregular menstruation. A metabolism test showed a rate of minus 17. This was brought to normal with thyroid medication

and pregnancy promptly occurred. Two years later she returned for another test as she desired another child. The rate was then minus 13. After more thyroid she promptly conceived. In another 2 years she reported that she was again pregnant. The doctor was surprised to find her metabolic rate normal, until he learned that she had been using iodized salt on her table. Meaker of Boston has recently reported a case even more interesting. The patient had been married 5 years. Examination disclosed a marked endocervicitis but post-coital examination showed that this condition in no way inactivated the spermatozoa. Study of the husband however revealed an unsuspected thyroid deficiency which was treated with thyroid extract. The cervix was not treated but pregnancy took place after two months.

The relation of adiposity to menstrual irregularity and sterility was shown in a paper by Dickenson and Cary of New York in 1926 where they quote Kisch as stating that, of 215 women with excessive adiposity, 75% had scanty menstruation, or none at all, and 21% were sterile.

RETINITIS OF PREGNANCY.

By J. W. LEECH, M.D.*

PROVIDENCE, R. I.

The subject of retinal changes occurring in pregnancy is one of great interest both to the ophthalmologist and to the obstetrician. Since the first description of retinitis of pregnancy by Von Graefe in 1855, very many cases have been reported, but relatively few large series of cases have been studied as the condition is not very common. Silex in a report of 35 cases arrives at the opinion that retinitis occurs once in 3,000 pregnancies. Shiotz, however, found retinitis once in every 240 pregnancies. Somewhere between these two widely divergent extremes doubtless lies the true ratio of retinitis to pregnancy, and it is only by sympathetic co-operation between the ophthalmologist and the obstetrician that the incidence of this complication of pregnancy can be determined. In spite of the great volume of literature upon this subject, one cannot fail to note a surprising failure to bring into mutual relationship the obstetric and ophthalmologic viewpoints. The ophthalmoscopic findings lose much of their value, if offered simply as

*(Read before the Providence Medical Association, October 1, 1928).

ophthalmic data without reference to the problem with which the obstetrician is grappling in his endeavor to conserve maternal and insure infant life.

Retinitis occurs more frequently among multiparas than primiparas, although the difference in incidence is not very great. Thus, Burnier found 51 cases reported in primiparas as against 68 in multiparas; Shiotz reported retinitis in 16 primiparas and in 24 multiparas; Nettleship found the condition in but 4 primiparas out of 19 cases of retinitis.

The greatest incidence of fundus pathology corresponds to the last third of the gestation period. Cases have been reported of retinitis occurring as early at the 4th month of pregnancy, but reports of series of cases indicate the great tendency for retinal disturbances to occur in the latter months of pregnancy. In Shiotz series there were:

- 3 cases in the 6th month,
- 11 cases in the 7th month,
- 15 cases in the 8th month,
- 8 cases in the 9th month.

Of Burnier's 119 cases, fundus pathology occurred in:

- 21% before 6th month,
- 78% from 7th-9th month.
- 8% postpartum.

The retinitis of pregnancy does not show a tendency to recur in subsequent pregnancies. The reason for this is probably due to the fact that retinitis occurs in two great classes:—1st, the acute toxemia of pregnancy, which itself does not recur and therefore, the attendant retinal disturbance does not recur; and 2nd, chronic nephritis. In this latter class developing retinitis, succeeding pregnancies are prevented if possible and if not prevented, spontaneous abortion is likely to occur at a date too early for the establishment of retinal complications.

The toxemias of pregnancy as confronted by the obstetrician fall into three groups, according to the classification at the Boston Lying-In Hospital.

1st. The Acute Toxemia of Pregnancy. The symptoms appear abruptly in the latter months of pregnancy, more often in primiparas, and comprehend headache, muscae volitantes, transient loss of vision, convulsions, scanty urine heavy

with albumin, and high blood pressure. The post-mortem kidney changes are not those of chronic nephritis but rather those of an acute toxemia entailing ecchymosis into the cloudy cortex with little or no interstitial change. The kidney changes are secondary to and not the cause of the toxemia. However, it is conceivable that sufficient renal damage may be caused by the toxemia of pregnancy as to render the kidney inadequate to carry the load of subsequent pregnancy without developing a true nephritis.

Spontaneous or induced termination of labor is usually followed by a return of normal kidney function and subsequent pregnancy may be expected to occur without recurrence of the toxemia.

2nd, Chronic Nephritis. In this class the kidney condition antedates the pregnancy which throws its burden upon this organ and exposes, perhaps for the first time, its inadequacy to resist the changed conditions incident to the pregnant state. The symptoms, occurring also in the latter months of pregnancy, but more commonly in multiparas, are of less abrupt onset and are generally those of chronic nephritis. The urine contains less albumin and more casts than that in acute toxemia, and upon the termination of pregnancy does not usually clear up, the blood pressure remains high and the woman emerges from her pregnancy a chronic nephritic, to whom subsequent pregnancy is a positive danger.

3rd, Recurrent Toxemia of Pregnancy. In this class, succeeding pregnancies are accompanied by toxemia with urinary changes, high blood pressure, but during the intervals of pregnancies no symptoms of renal insufficiency are demonstrable. Possibly this class is not a distinct entity, but rather comprises those women whose kidney function is sufficient for ordinary demands, but whose renal reserve is inadequate to bear the extra burden of pregnancy, and perhaps should properly be considered as of class 2—the nephritics.

In pregnancy complicated by retinitis, the prognosis as to life and vision of the mother depends upon the duration of gestation. Cases of retinitis which go to full term show the largest proportion of maternal deaths—15%; spontaneous delivery results in a mortality of 11%, while arti-

ficial interruption of pregnancy is attended by a mortality of 4.4% of the mothers.

It has been aptly said that "serious impairment of vision or blindness is a large price to pay for a baby that is quite apt to be dead" (Cheney). Burnier reports an infant mortality of 79% where the mother shows marked fundus changes. In a series of 155 cases showing well marked retinitis of pregnancy by Rochin-Davigneaud, the prognosis as to vision is seen similarly to depend upon the duration of pregnancy:—

Fifty-three (53) patients were allowed to finish the pregnancy and of these 11 women or 20% were blind and ten (10) recovered normal vision.

Spontaneous delivery occurring before term in 34 patients resulted in 4 blind or 11.7%; ten (10) patients recovered with normal vision.

Labor was induced in 68 patients and of these 4 women or 5.8% were blind. Nineteen (19) patients obtained normal vision.

It would be highly desirable if it were possible to predicate upon the fundus changes in these cases of retinitis of pregnancy the type of retinitis with which we may be dealing and so establish a basis upon which the treatment of these cases should be treated, for in the case of chronic nephritis in which sudden convulsive seizures are less prone to develop, the obstetrician feels a greater degree of conservatism and delay as regards interruption of labor is justified than in the case of acute toxemia of pregnancy. Unfortunately our knowledge to date is not comprehensive enough to do this, and the hope of acquiring this knowledge has been one of the reasons for the initiation of a pre-natal ophthalmological clinic at the Providence Lying-In Hospital within the past few months. It is hoped by obstetrician and ophthalmologist that co-operation in observation and accumulation of data may at some time throw some light on this problem. As it is now the fundus picture is that of an acute retinal toxemia, be it of the acute toxemia of pregnancy or the chronic nephritis in pregnancy which is the cause of the retinal pathology. The retinal arteries are narrowed in calibre and show increased tortuosity. Retinal hæmorrhages may vary from a few to the widespread hæmorrhagic splashing of a typical albuminuric retinitis. In the toxemic type the retinal edema may be more pronounced, appearing

as bits of fleecy cloud throughout the retina or even accumulating as large subretinal collections resulting in detachment of the retina. These fundus changes, even the extreme retinal separations, may disappear rapidly on the termination of labor. In the chronic nephritic cases, it may be possible to detect more pronounced vascular changes, such as narrowing and rigidity of the arteries, indentations of the underlying veins by the arteries already the seat of a fibrosis due to the nephritic condition antedating the pregnancy. However, this is more hypothetical than actual in the light of our present knowledge and skill in evaluating retinal vessel changes, for a chronic nephritis, as is well known, may exist for some time without causing demonstrable vessel changes in the retina and the sudden lighting up of the nephritis incident to the pregnancy load will result in a predominance of the acute toxic picture quite obscuring chronic vascular fibrosis even if present. In estimating the degree of visual damage residual to a retinitis of pregnancy it should be borne in mind that there is a better chance of a return of retinal function after extensive infiltration and hæmorrhages in these cases than one would be justified in assuming in a similar fundus picture in the course of an ordinary severe nephritis not associated with pregnancy, for the exciting cause of the acute retinal toxemia, i. e.—pregnancy, is removable and once removed the kidneys, tho' to some degree crippled, may have sufficient reserve to avoid a continuing toxic action on the retina.

In view of the mortality rate for mother and child when retinitis supervenes on pregnancy and the pregnancy is allowed to go on to term, and the possibility of serious visual loss in the mother, it would seem to be the better course to actively interfere with the pregnancy when retinal pathology makes its appearance before the eighth month. Should it be possible to arrive at the conclusion that one is dealing with a retinitis of the nephritic rather than the toxic type and if medical treatment is followed by decided improvement in the ocular and systemic symptoms, the obstetrician would be justified in pursuing a Fabian policy. It is, however, by close co-operation and sympathetic appreciation of the point of view of both obstetrician and ophthalmologist that a reasonably accurate basis for action will be

brought about, which will safeguard the life of mother and child on the one hand and conserve the mother's vision on the other.

DISCUSSION

The case referred to by Dr. Noyes was an eclampsia ending fatally which, within twelve hours of death and after a series of severe convulsions, showed a large detachment of the retina in one eye and an infarct in the choroid in the other eye. Repeated examination of the fundi for several days had shown only a general edema of the retinae. This was an unusual case but it shows that a woman may die of eclampsia without the retinitis with hemorrhages and exudates which we often see. The obstetrician needs a better knowledge of the nature of toxemia in pregnancy. At the Lying-In-Hospital we are examining a great many eyes, most of them normal. We hope to observe the very earliest retinal changes in toxic states and we hope to be of some help to the obstetrician clinically and, perhaps vainly, we would do our part in the broad study of all phases of this intricate problem.

DR. I. H. NOYES:

I should like to speak of one case of detached retina which came under observation during my service at the Lying-In-Hospital last spring. The patient was admitted after having had some convulsions and, as she had received practically no prenatal care, we found it difficult to determine whether the condition was due to chronic nephritis or acute toxemia. In some respects however she seemed clinically more like a nephritic. This patient did not recover.

From what Dr. Leech has told us, the mortality in these cases of retinitis must be considerable. I have seen a number of patients suffering from toxemia who were almost totally blind. Some of them died but, as far as I can remember, I have never seen an obstetrical case left blind after recovery from her toxemia.

DR. E. G. MELVIN:

In conjunction with Dr. Leech's paper, I would like to report a case of toxemia of pregnancy. It did not show any signs until about six weeks before she was due to be delivered. At that time her pressure was high and she was showing considerable albumin. Consultation was had with

Dr. Appleton who advised that the patient be kept in bed. For days after, patient began to complain of failing eyesight. A week later, she could not see at all. It was thought best to terminate labor at this time because of the fact that the patient might suffer blindness. However, she was given appropriate treatment and two weeks before delivery, her vision came back. Two weeks later she delivered herself with a perfectly normal baby. Patient has had no eye trouble or eye symptoms since.

DR. C. A. McDONALD:

(1) How early in the pregnancy must the eye signs appear and do the eye signs appear earlier than other signs of toxemia?

DR. R. F. HACKING:

In the work at the Lying-In, not more than two or three cases showed anything of particular interest and of those two or three chronic nephritis was most pronounced.

DR. PAUL APPLETON:

The ocular symptoms add another to the dilemma that we always have in the treatment of the cases of severe toxemia of pregnancy. With increasing limitation of vision we are confronted with the necessity of radical treatment and the emptying of the uterus in order to save the eyes of the mother.

About a year ago we had a case at the Lying-In Hospital, in which the eye grounds showed very marked hemorrhage disturbance, but the patient was not clinically very sick with her toxemia but Doctor Leech saw the case and advised interruption of labor in order to save the rapidly increasing loss of vision in the mother. I am sure that mothers suffering from toxemia do not have good babies. Even if delivered alive, the babies often die from absorbed toxemia, and I feel that we are justified in treating mothers radically to save their eyesight even at some risk to the baby.

It is certain that the moral of Dr. Leech's excellent paper is that we should follow the eye-grounds carefully in all cases of suspected toxemia.

DR. J. W. LEECH:

The retinal signs may appear in the eye as early as the fourth month but usually during the last three months. As to whether the eye signs appear earlier than other toxic signs, that I do not know.

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PERIODICAL HEALTH EXAMINATIONS

—A DIFFERENT POINT OF VIEW

For some years the efficacy of periodical so-called "health examinations" has been emphasized more and more. Part of the result of this activity has been an increasing number of periodical examinations of supposedly healthy people by physicians and by numerous lay organizations, some of a philanthropic nature and others frank-

ly commercial. In connection with the campaign for increasing these examinations, emphasis has continually been laid upon the fact that disease was to be discovered in its very early stages. The term "pre-clinical" has been used, assuming that serious disease was to be discovered before any real symptoms had set in, and that as a result, death from the many diseases of middle and old age was to be prevented or postponed.

A very refreshing point of view on this problem has been brought out by Clendening who is Associate Professor of Medicine at the University of Kansas. In a recent popular article en-

titled "Health Audits",* he denies very flatly the supposed benefits that have resulted from periodical health examination of symptomless adults. A careful review of the published results of extensive groups of such examinations shows that emphasis is laid generally upon the finding of certain minor defects in large numbers. Conditions such as frequent colds, deflected nasal septa, heavy dentistry, flat feet, chronic skin diseases, etc., are frequently mentioned. This, however, seemed strange material with which to do life extending. As the author very pertinently remarks, "Men have died and worms have eaten them, but not from flat feet." He is convinced that the real serious diseases of life that afflict middle age are not to be detected when there are no symptoms, at a stage when anything can be done about them. When actual disease arrives it usually produces symptoms, many of which require careful and skillful history taking to elicit. This is an additional reason why health examinations when they are made, are much better made by a family physician who can estimate and draw out significant symptoms.

The non-medical aspect of many of these examinations has been increasing in its seriousness so that not long ago the American Medical Association was forced to take official cognizance of the situation. The A. M. A., however, has persistently refused to give its official approval to the work of the institutions devoted to this form of so-called "life saving" but has recommended that all periodical health examinations be conducted by the private physician.

On the whole in adults, Clendening is convinced that the serious system diseases cardiovascular and otherwise, that cause so many deaths will not be decreased at all in their number or incidence by the examination of groups of symptomless individuals. The usual examination of this type results in a great deal of mental upset and mischief generally. The great majority of such patients who are thus examined and told about very slight so-called abnormalities in blood pressure, heart rhythm, or renal function, are made introspective for the rest of their lives, without affecting in any degree the death rate from serious disease.

While the good faith of the promoters of various lay institutions may be assumed, nothing resembling real scientific proof has been brought out that annual examinations of adults result in any extension of life whatever. Such examinations should not be confused with the very valuable periodic health examinations of children. In the latter group we are dealing chiefly with infectious diseases that attack the young. The prevention of these diseases has already been given serious study and considerable is known about them from a public health aspect. In this group periodical examinations can be definitely said to prolong lives.

The entire matter has been studied for only a few years, far too short a period of time to draw any fair conclusions. The proponents of periodical examination for adults, however, are usually quite noisy and vociferous in their claims, and try to make up by enthusiasm for the lack of real scientific basis. It will take years and a very thorough study before any valid conclusions can be drawn. Meanwhile, a conservative attitude toward the whole problem is justified. Statistical studies worked out by capable men show that the most potent factor that has influenced length of life in various individuals was a family history of longevity. Periodic health examinations with their multifold detection of slight or negligible defects bear no relation to this underlying factor. Clendening comes to the final conclusion that most people are a good deal healthier than they think they are, and that periodical health examinations for symptomless adults are on the whole productive of more harm than good.

WILLIAM T. G. MORTON

Throughout the world, pain was everywhere triumphant and uncontrolled. The replacement of dislocated joints, the reduction of fractured bones, the removal of malignant growths, the extraction of aching teeth, were attended by agony too great for human flesh to bear. Through years of suffering, surgery and pain had become synonymous in the minds of all people. The physician doubted that such suffering could ever be relieved. He accepted the infliction of pain as a necessary accompaniment to his day's work.

*American Mercury, October 1928—XV, 145.

One man alone stood forth and loudly proclaimed:—"It shall not be so." William T. G. Morton, on October 16th, 1846, and the days which followed, demonstrated, at the Massachusetts General Hospital, what we know as Surgical Anesthesia. He quieted the groans of tortured victims and stilled their terrified screams. Where he found untold agony, he left quiet sleep. In the achievement of his great service to humanity, himself he never spared. Broken in health and fortune, he died while still a young man but not before his great object had been accomplished. Though poor, he was rich, for all the world was his debtor.

A simple granite shaft, erected by citizens of Boston, marks the grave of Morton in Mount Auburn Cemetery.

The epitaph was written by Dr. Jacob Bigelow: "William T. G. Morton, Inventor and Revealer of Anaesthetic Inhalation.

Born August 9, 1819, Died July 15, 1868.

By whom pain in surgery was averted and annulled.

Before whom in all time surgery was agony.

Since whom science has control of pain."

SOCIETIES

PROVIDENCE MEDICAL ASSOCIATION

The regular monthly meeting of the Providence Medical Association was called to order by the President, Dr. Edward S. Brackett Monday evening, October 1, 1928, at 8.45 o'clock. The records of the last meeting were read and approved.

The Standing Committee having approved their applications the following were elected to membership; John Irving Pinckney, Rocco Abbate, Angelo Scorpio.

The secretary announced that the Polyclinic Club of St. Petersburg, Florida, invited all our members to accept their hospitality when in that city.

Announcement was made of a lecture by Dr. Lafayette Mendel of Yale on nutrition, to be given October 22, before a luncheon of the American Homemakers. A request from the President of the District Nursing Association was read and the President of the Medical Association was

empowered to appoint an advisory committee of five to act with the Nursing Association. The President appointed Drs. Weyler, C. O. Cooke and Albert an obituary committee for Dr. Meyer Persky and Drs. J. W. Peters, Leonard and Kingman for Dr. James R. Morgan.

Dr. James W. Leech read the first paper of the evening on Retinitis of Pregnancy. He felt that this problem required co-operation between the ophthalmologist and the obstetrician. It usually occurs in multipara in the latter months of pregnancy and not often in subsequent pregnancies. Retinitis cases going to term show the largest mortality, the prognosis corresponding to the length of pregnancy. The retinal findings do not enable one to tell the type of toxemia. There is more hope of the retinal changes clearing in these cases than in the non-pregnant. When these changes are seen before the eighth month interference with pregnancy is advisable. The paper was discussed by Dr. C. A. McDonald, Dr. Hacking, Dr. Noyes, Dr. Messinger, Dr. Appleton, Dr. Melvin and Dr. Leech.

The second paper was by Dr. Ira H. Noyes on Sterile Marriages and the medical problems they present. About 10% of marriages are sterile. It has not been sufficiently appreciated that the male may be at fault. Any condition interfering with the quick passage of semen in the female tract may prevent pregnancy. Endocervicitis usually but not always of gonorrheal origin is the commonest cause of interference. Inflammation of the endometrium probably interferes with the progress of pregnancy rather than with the conception. The role of malposition of the uterus is debatable. Disease of the adnexa is of great importance. Gas insufflation for the determination of tube patency is a valuable procedure and the injection of lipiodal is still more valuable. The reader outlined the details of examination of both the male and female. In summing up he emphasized that there are still many mysteries connected with this problem.

The paper was discussed by Dr. Eric Stone from the view point of the male. He gave detailed statistics on a series of 36 males. Also discussed by Dr. C. A. McDonald, Dr. J. A. McCann, Dr. Kerney, Dr. Cameron, Dr. Jacob Kelley, Dr. Oddo and Dr. Noyes.

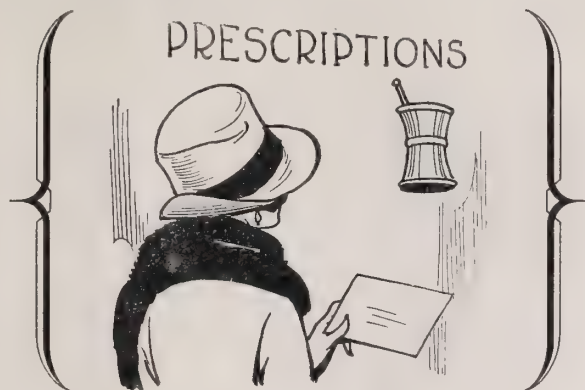
The meeting adjourned at 10.45 P. M. Attendance 96.

Collation was served.

Respectfully submitted,

PETER PINEO CHASE,

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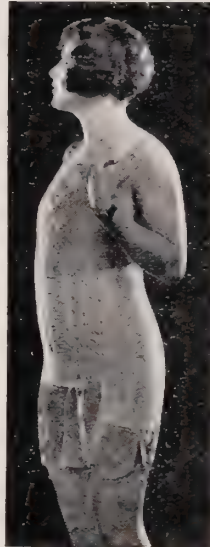
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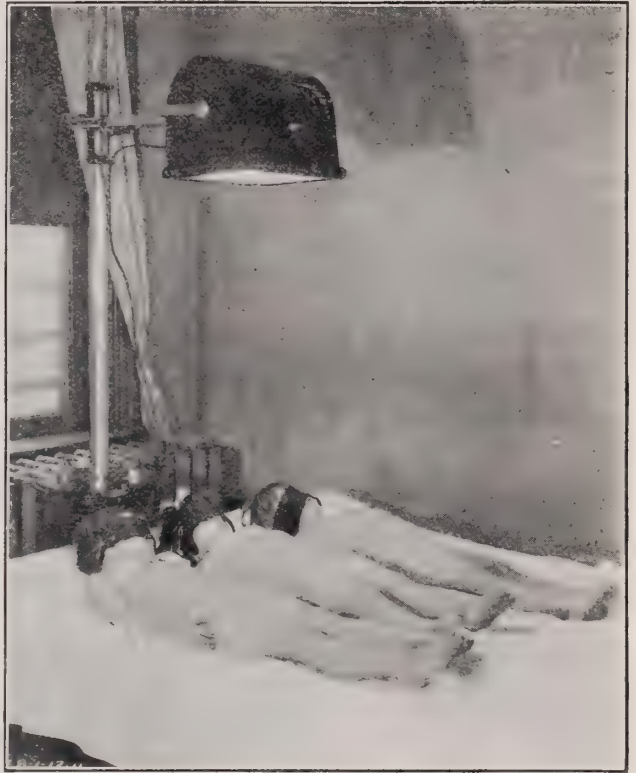
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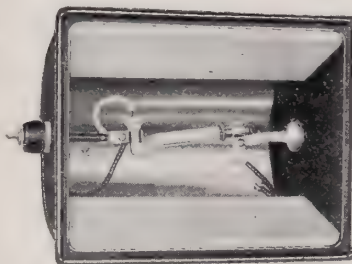
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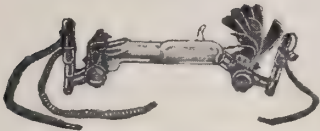
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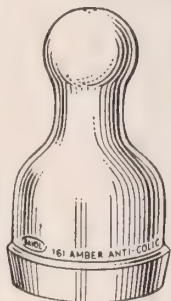
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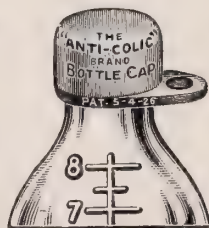
BRAND

No. 150



Has ball top with three holes like the original Anti-Colic brand nipple. Is made seamless with reenforced walls at sides of top and shoulder of base. Will not collapse. Special tapered bottom bead grips the bottle lip. Will not pull off, yet is easily removed. Reversible for thorough cleansing. Retains shape after repeated sterilization.

10c ea. Carton of 3-25c



Forms an air-tight seal. Absolute protection for both bottle lip and contents from contamination of dust, insects and germs. The patented tab makes it easy to apply or remove the cap. May be repeatedly sterilized without change of shape.

10c ea.
Carton of 6-50c

Complimentary Samples will be mailed on request

Davol Rubber Company
PROVIDENCE, R. I., U. S. A.

The New York Academy of Medicine

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